The Economics of Happiness: Linkages between Microfinance, Happiness, and Wellbeing in Rural Thailand

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Dedication

This thesis is dedicated to *Tongpian Pitaksampan (Na Pian)*, who participated in this study but sadly passed away before being able to see the results of her contribution. Her kindness and generosity of spirit will always be remembered.

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Abstract

The idea of microfinance has burst into the area of global poverty reduction. Many comments have been made about its benefits such as; it is an alternative tool for poverty alleviation and sustainable development. Many studies have attempted to assess different facets of the impact of microfinance, especially trying to show its potential for greater financial inclusion and economic benefits using advanced rigorous quantitative approaches. Although some studies have evaluated this topic in the past there remains some significant gaps in the literature, including the impact of microfinance on other dimensions such as the social impact, education or environmental impact, the impact on happiness and subjective wellbeing of its clients has been hardly examined.

This study aims to fill this gap by using rigorous quantitative methods with a rich qualitative dataset to assess the impact of microfinance on both economic and non-economic aspects, especially the happiness and psychological dimension. I Use primary data from a household survey and an ethnographic approach combining quantitative methods such as matching estimators, propensity score matching with nonparametric regression. The mixed methods were employed in order to evaluate the impact of the microfinance schemes on the improvement of borrowers' wellbeing, household condition and local economic and environmental development.

The most notable findings were that the borrowers from the savings group using group lending schemes utilised the loan for mainly entrepreneurial purposes and household spending, performed better than other groups of borrowers. This could be seen from the increase in household income and a high repayment rate. In addition, by observing the social impacts, it indicated that the group lending together with the ecotourism project generated and strengthened the social ties in the community. The group members also produced high positive psychological indicators compared to the non-member households.

Easterlin's paradox was revisited and found that not only was it income that affected happiness and wellbeing, but other factors seemed to have an influence on

self-reported happiness. Those factors included health or health condition of family members which significantly influenced self-reported happiness in all models.

Considering the impact of microfinance on happiness and wellbeing, it was found that clients of the group lending scheme can repay better and led to a higher level of self-reported happiness and subjective wellbeing. The ability to repay also affected a low level of stress or negative moods.

Keywords: microfinance, impact assessment, happiness, wellbeing, rural Thailand

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Acronyms and abbreviations

ANOVA	Analysis of variance
ATE	Average treatment effect
ATET	Average treatment effect for the treated
ATT	Average Treatment on the Treated
BAAC	Bank of agriculture and agricultural bank
BD	*Bia Dork* (local informal loan)
C	Control group (controls)
CGAP	The consultative group to assist the poor
CII	Community impact index
DA	District administrator
DAO	District administration organisation
EPA	Epanechnikov kernel
ETT	Effect of treatment for the treated
FA	Factor analysis
GAU	Gaussian kernel
HDI	Human development index
HDR	Human development report
HII	Household impact index
III	Individual impact index
KMO	Kaiser-Meyer-Olkin statistics
LFSGN	Libong island fisher folk savings group network
LSG	Libong savings group
LSGF	Libong savings group fund
LSAO	Libong sub-district administration organisation
M.	Moo (Village)
M.	Secondary education from grade 7 to 12 (Mor or Mattayomsuksa)
MAX	Maximum
MDGs	Millennium development goals
MIN	Minimum
NA	Negative affect
NAI	Negative affect index
NEB	National economic board
NEDB	National economic development board
NEF	The new economics foundation
NESDB	National economic and social development board
NESDP	National economic and social development plan
NVUCF	National village and community fund
OP	Ordered probit model
OWB	Objective wellbeing
P.	Primary education from grade 1 to 6 (Por or Prathomsuksa)
PA	Positive affect
PAI	Positive affect index

Acronyms and abbreviations (continued)

PANAS	Positive affect and negative affect schedule
PASW	Predictive analysis software
PATC	Population average treatment effect for the controls
PATE	Population average treatment effect
PATT	Population average treatment effect for the treated
PCA	Principal component analysis
PWB	Psychological wellbeing
PWI	Psychological wellbeing index
SATC	Average treatment effect for the controls
SATE	Average treatment effect
SATT	Average treatment effect for the treated
SEEP	The small enterprise education and promotion network
SNP	Semi-nonparametric model
SML	Small and medium loans
SPSS	Statistical package for social sciences
STDV	Standard deviation
SWB	Subjective wellbeing
T	Treatment group (treated)
TAT	Tourism authority of Thailand
TDRI	Thailand development research institute
TRI	Tricube kernel
VF	The village fund
VFC	Village fund committee
WPL	Wellbeing project loan

Glossary

Amphoe	District
Aw Baw Taw	DAO (District/sub-district Administration Organisation)
Baht	Bath (Thai currency)
Ban	Village (Followed by a village's name e.g. Ban Kuan)
Bia Dork	Informal loans from local moneylenders
Bia Satcha	Monthly promissory savings
Bia Lan	The National and Urban Community Fund (NVUCF) or "The village fund"
Chae	Rotating Savings and Credit Association (ROSCA)
Changgarb	Local word for informal conversation
Changwat	Province
Chang Khee Khee Tam Chang	Keeping up the Joneses
Dey	Local word for debt
Deuan Buad	Ramadan month
Dork	Interest
Dork Bia	Interest
Gharn Ghin Dee Yoo Dee	Wellbeing (Old style)
Glum	Group or club
Glum Orm Sab	Savings group
Glum Mae Ban	Housewife group
Huana Klum	Group leader
Kamnan	Sub-district headman
Koh	Island
Kongtun	Fund
Kongtun Moo Ban	The village fund
Kongtun Ngeun Lan	The village fund
Kwam Yak Chon	Poverty
Kwam Yoo Dee Mee Suk	Wellbeing
Loh	Gathering marine animal especially shrimp by night
Mee Suk	Being happy
Moo	Village (Followed by village's number e.g. M.1)
Moo Ban	Village
Ngeun Lan	The NVUCF (Literally means million baht)
Pae	Local fish dealers
Pattanakarn	Senior local development officer
Pattanakorn	Local development officer
Poo Chauy Poo Yai Ban	Village headman assistant
Poo Yai / Poo Yai Ban	Village headman
Raya Org Buad	Hariraya day (Muslim New Year)
Raya Yee	90 days after Hariraya
Sai	Fish trap

Glossary (continued)

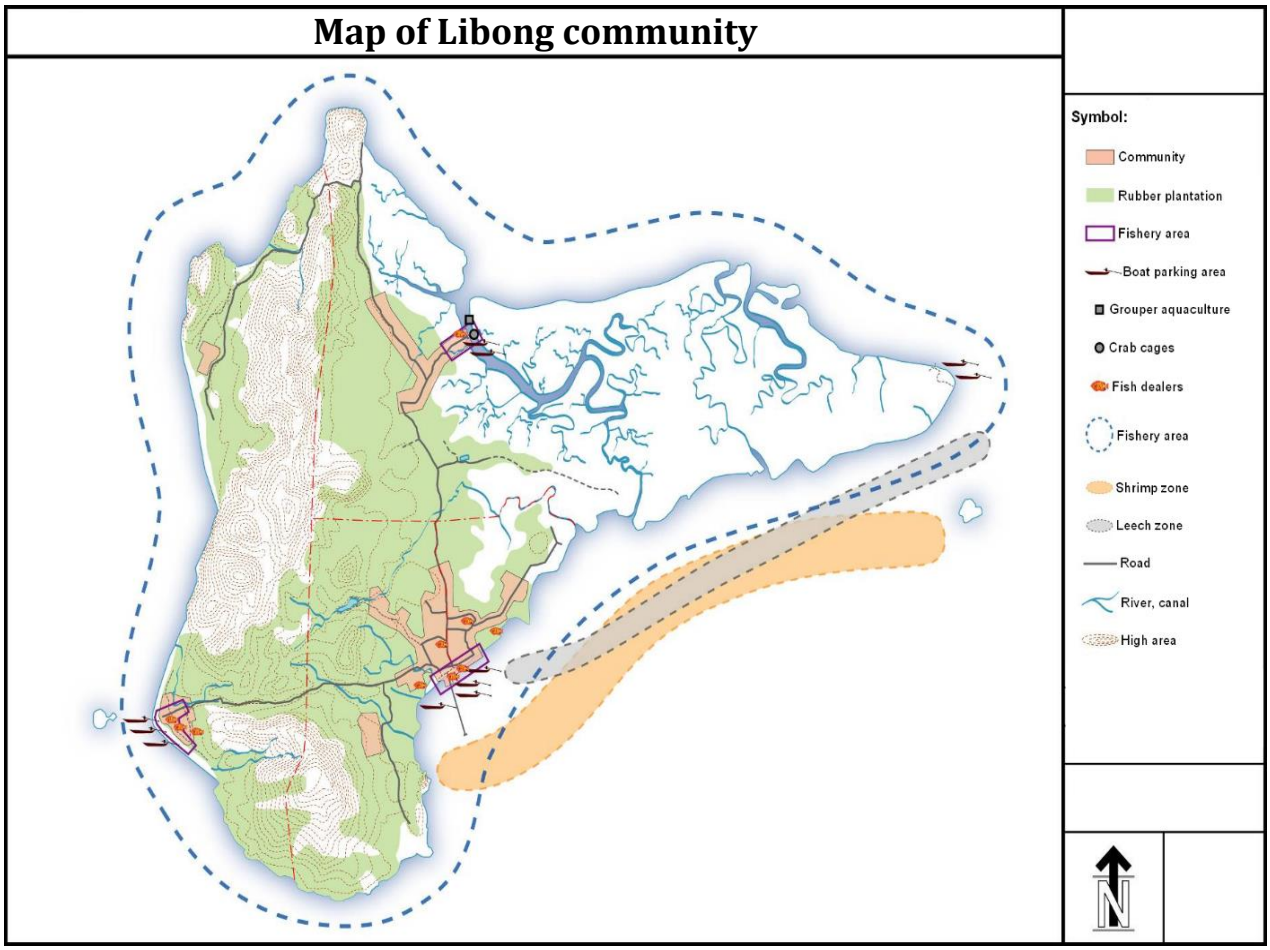
Sai Pu	Crab trap
Tad Yang	Rubber tapping
Tad Yang Wah	Hired rubber tapping
Tambon	Sub-district
Taokae	A money lender, a rich and powerful person
Wang Uan / Wang Sai	Catching crabs/ catching fish
Yang	Rubber tree
Yang Wah	Hired rubber tapping farm
Yoo Dee	Live well
Yoo Dee Mee Suk	Live well and being happy
Yoo Yen Pen Suk	Blessing word from elderly/adult to younger

Symbol

*	Significant at the 10 % level
**	Significant at the 5 % level
***	Significant at the 1 % level
†	Significant at the 0.1 % level
α	Constant or the intercept term
β	Coefficient
ζ	Threshold in the ordered probit model
Δ	Unmatched sample
χ^2	Chi-square statistics
λ	Lambda statistics
η	Eta statistics
μ_t	Means of all group
μ_i	Means of the first group
μ_j	Means of the comparison group
ν	Use of loan
τ	Goodman and Kruskal's tau statistics
ω	Key use of loan
B-F	Brown-Forsythe robust test of equality of means
F	F statistics
H	Self-reported happiness
i	First group for the means comparison
j	Second group for the means comparison
L	Levene's test of homogeneity of variances
N	Number of samples
N_{BS}	Number of samples having promissory saving
n	Negative affect value
p	Positive affect value
p	Critical value
Q	Loan amount
r	Correlation coefficient
S	Monthly saving
V	Cramer's V statistics
W	Welch robust test of equality of means

Map of Thailand

(Source: http://www.lib.utexas.edu/maps/thailand.html)
Courtesy of the University of Texas Libraries, University of Texas at Austin



(Source: Rattasomboon, 2007)

"I believe that the very purpose of life is to be happy. From the very core of our being, we desire contentment. In my own limited experience I have found that the more we care for the happiness of others, the greater is our own sense of well-being. Cultivating a close, warmhearted feeling for others automatically puts the mind at ease. It helps remove whatever fears or insecurities we may have and gives us the strength to cope with any obstacles we encounter. It is the principal source of success in life. Since we are not solely material creatures, it is a mistake to place all our hopes for happiness on external development alone. The key is to develop inner peace."

(Dalai Lama XIV, 1997)

The Speech of His Holiness the Dalai Lama at the "Forum 2000" Conference, Prague, Czech Republic, September 1997. From the Office of Tibet website, the official agency of His Holiness the Dalai Lama in London.

Chapter 1
Introduction

1.1 Linkages between microfinance, happiness and wellbeing

The ultimate goals of nations from Millennium Development Goals (MDGs) to Sustainable Development Goals (SDGs) includes aiming for the best possible wellbeing for a country's inhabitants. These goals, for example, include eradicating poverty, ending hunger and achieving food security and improved nutrition, as well as promoting sustainable agriculture and ensuring healthy lives for all inhabitants over all ages. (United Nations, 2017). The existing literature in this area has so far focused mostly on the economic aspects of microfinance and wellbeing, the main contribution of this thesis is that it explores both the economic aspects and the non-economic aspects of microfinance and wellbeing including social and psychological dimension of wellbeing.

In order to achieve those challenging development goals, various types of policies have been employed. One of the most effective tools has been the microfinance programmes. It is generally accepted that microfinance offers opportunities for the poor to raise their incomes through investment in new enterprises or expanding existing ones. In addition such people can cope with potential vulnerability and unexpected spending due to sudden crises as a result of broadening their sources of earnings. However, in rural and remote regions, microfinance seems to be hampered by a lack of appropriate infrastructure together with inadequate human capital and low levels of support from the government.

This study attempts to analyse the impact of microfinance on poverty reduction and wellbeing in Thailand using the case study analysis involving the "National Village and Urban Community Fund" (NVUCF) programme launched in 2001. This impact assessment focuses on the reduction of poverty incidence covering multidimensional aspects including economic, socio-cultural and political facets. Not only are the economic impacts analysed, however, other non-economic indicators are taken into account for this study. These are, for example, subjective

wellbeing, harmony in the community and participation in society. In particular I focus on subjective wellbeing, as this is one of the main gaps in the existing research.

Additionally, the microfinance impact on wellbeing using both objective and subjective approaches will be explored. Many studies have examined the impact of microfinance by focusing on the economic impact, social impact or environmental impacts. This study not only examines those impacts but also attempts to show the linkages between them through the use of a microfinance scheme in the community. Furthermore, by adding subjective wellbeing into one dimension of the impact assessment, the results from the wellbeing impact assessment can be used as a guideline for policy implementation in order to improve the quality of rural financial services and expand knowledge about impact assessment to other areas of demand-side microfinance development.

1.2 Research questions

My aim is to study and make a better understanding of happiness and wellbeing and how they are linked to microfinance programmes. The research questions are as follows.

i) How do the rural Thais perceive happiness and wellbeing?

ii) What are the underlying determinants of their happiness and wellbeing?

iii) To what extent does participation in microfinance programmes influence happiness and wellbeing, and in what way?

1.3 Aim and objective of the study

Given the potential effects of microfinance on wellbeing, as claimed by previous studies, this study aims to specifically investigate the relationship between microfinance, wellbeing and the self-reported happiness of the microfinance clients. Conceptualisation of both happiness and wellbeing, however, is incongruous, ambiguous, and lacks a universally accepted definition. It is inevitable we need to overcome these conceptual barriers in order to understand how a microfinance programme can contribute to the improvement of the borrower's wellbeing.

To achieve the aim of the research, the main objectives for this study are linked and have been set as:

1) Wellbeing and happiness conceptualisation

Using multi-disciplinary methods, this study aims to fortify the concept of wellbeing and happiness in order to contribute to the better understanding of the terminologies and how to measure these abstract variables. Various methods are employed in order to illustrate different ways of measuring wellbeing and happiness.

2) Determinant identification

This study attempts to investigate and identify important factors which potentially influence wellbeing and the happiness of people. Economic variables such as household income and expenditure are the main factors for this purpose. Socio-demographic factors, however, are considered as being just as important as the economic ones.

3) Microfinance-happiness-wellbeing relationship

In order to better understand the impact of microfinance on happiness and wellbeing, this study attempts to examine how a microfinance programme affect the happiness and wellbeing l of its clients.

1.4 Contributions of the study

The contributions of this research can be divided into three areas:

The results from this research can make a contribution to both the academic field and policy implications.

1.4.1 Empirical work contribution

This study has employed a unique set of data from a rural field survey. This primary data combining ethnographic and different types of qualitative and quantitative methods has provided robust and genuine empirical results. Additionally I have incorporated new measures into the empirical models, such as psychological wellbeing indicators. Moreover, by triangulating various qualitative and quantitative methods, not only has it created rigorous empirical results but also can be re-deployed to other similar settings.

1.4.2 Policy contribution

In practice, the results of this study will provide evidence and potential solutions for policy makers in order to launch and extend the microfinance programme in rural Thailand more effectively and sustainably. Also, successful examples from this study can be a role model for replication in other group-based microfinance schemes in terms of organisational management. Finally, the notion of wellbeing from a grass-roots perspective is a valuable source of information for making incoming policy to suit what people want and lead to efficiency in public policy. As microfinance schemes are one of the policy tools that the Thai government aims to introduce more in the near future, the results of this study can provide a preliminary guideline for the Thai government when it launches or invests in these new or existing microfinance schemes. In particular it can provide evidence on where the most appropriate areas for future investment and training are.

1.4.3 Theoretical contribution

Although there is not a specific theoretical model analysed here, these results can potentially be used to illustrate the existing theories of microfinance and wellbeing such as Easterlin's paradox. This contribution also helps to expand our understanding of impact assessment with regard to microfinance schemes on the borrowers' wellbeing which could be of relevance to non-economics disciplines.

1.5 Thesis structure

In this study, I have sought to highlight the relationship between microfinance, happiness and wellbeing in the case of rural communities in Thailand. This study is organised into three parts. The structure of each part and chapter proceeds as follows.

Table 1.1 Thesis structure

Chapter	Chapter title	Content
Part I Introduction and related literature		
Chapter 1	Introduction	Introduction to the present study
Chapter 2	Literature Review: The Economics of Happiness	Review of related literatures
Part II Methodology and data set		
Chapter 3	Research Methodology	Methodology
Chapter 4	Libong Household Survey and Data Exploration	Research site and data exploration
Part III Results and conclusion		
Chapter 5	Understanding Happiness and Its Determinants	Empirical results
Chapter 6	Microfinance Impact on Happiness and Wellbeing	
Chapter 7	The Repayment-Wellbeing Relationship	
Chapter 8	Conclusion	Conclusion, discussion and recommendation

1.6 Thesis outline

Part I Introduction and related literature

Chapter 1 Introduction

This chapter introduces the background of this study by summarising relevant information and the rationale for the importance of studying microfinance and its relationship to happiness and wellbeing. This chapter also includes the aims and objectives of this study and the contributions of this study to the economics area. Finally, the research structure is set up as a guideline for the whole research.

Chapter 2 Literature review: The Economics of Happiness

In this chapter, relevant literatures on happiness and wellbeing are discussed. It focuses on relevant issues in the economics of happiness which is divided into four main parts. The first three parts review relevant concepts and theories including i) the definition of happiness, ii) the happiness measurements discussing different

methods for measuring happiness and wellbeing from the conventional approaches to the current multidimensional methods and iii) determinants of happiness. Another section provides arguments about the impact and the relationship between microfinance, happiness and wellbeing. A review of previous literature on microfinance will be discussed and linked to the present study.

Part II Methodology and data set

Chapter 3 Research methodology

Methodological issues for this study are raised in this chapter. It includes the fundamental settings for this research and research design. Another part of this chapter discusses the population, the research site, Libong island communities and the sample selection process. Then, data collection methods and research tools for this research are introduced. All data collection phases including the quantitative household survey, multidisciplinary fieldwork and the in-depth key informant interviews are explained in detail. Given one objective of this research is to produce a better understanding of wellbeing and the impact of microfinance on wellbeing and happiness, various types of research tools including both quantitative and qualitative instruments were employed. In addition, this chapter presents the data analysis conducted in this study which embraces econometric models on happiness and wellbeing on the one hand, and qualitative analytical techniques on the other. Last but not least, it is important to remark on and discuss ethical and general issues occurring during the data collection process since this study involves individuals and communities where this research could have an influence on their existing circumstances.

Chapter 4 Libong household survey and data exploration

This chapter focuses on the data sets used in this study. The first part provides general information about the research site characteristics and gives more details about the households and communities. Initially, general characteristics including geographic, demographic, socio-economic status and cultural issues are discussed. The second part of this chapter discussed the village politics and beneficiary groups in the communities and its influence on the microfinance programmes. These bring changes to people's livelihoods and affects their wellbeing from small individual

impacts to tremendous transformations in their society**.** The final part explained the data sets which will be used for the empirical chapters.

Part III Results and conclusion

Chapter 5 Understanding happiness and its determinants

This chapter is the first one out of three empirical chapters. It emphasises is on happiness models and the determinants of happiness and wellbeing. Happiness variables are measured by a universal question "Taking all things together, how would you say things are these days? Would you say you are _____., where individuals can respond as "very happy", "fairly happy", or "not too happy". Comparing results from different models such as the ordered probit model and ordered logit model, it helps to make a better picture of which factors are affecting happiness and wellbeing.

Chapter 6 The impact of microfinance on Happiness and Wellbeing

This second empirical chapter investigated the impact of microfinance on different aspects of happiness and wellbeing. The impact analysis can be categorised into the individual, household and community level. Also, this study assesses the impact of microfinance on self-reported happiness and subjective wellbeing using different mean comparison techniques and combining quantitative with qualitative methods.

Chapter 7 The Repayment-Wellbeing Relationship

This chapter provides some empirical evidence on linkages between the repayment and wellbeing of borrowers on the microfinance programmes. After assessing the impact of microfinance on wellbeing in chapter six, this chapter investigated how the repayment behaviour affects the subjective wellbeing of borrowers and vice versa. The relationship between the repayment capacity and psychological wellbeing indicators are explored and this can be another channel to explain the impact of microfinance programmes on the borrowers' wellbeing.

Chapter 8 Conclusion

This final chapter concludes and discusses all the microfinance impacts found in this study with some illustration of the existing theories and policy implications. It begins with summarizing the linkages between microfinance, happiness and

wellbeing. Then follows a discussion proposing a multidisciplinary method used in the present study for microfinance impact assessment. Policy applications from the case studies and the connection to sustainable development strategies are also discussed. Finally, it suggests future research related to the development of this field.

Chapter 2
Literature Review: The Economics of Happiness

2.1 Introduction

This chapter discussed wellbeing definition and its development from the early definition which is dominated by economic dimension to broader meaning. The evolution of the dominant meaning and measurement of wellbeing will be firstly discussed. The development and conceptualisation of these terminologies will be drawn from monotonous idea to the more complex and multidisciplinary spectrum. The wellbeing in the context of Thailand will be discussed and followed by some empirical studies of wellbeing perspective in a case study of Libong community.

Prior studies on wellbeing and its determinants have focused on mainly socioeconomic factors. This study also examines the impact of socioeconomic factors on wellbeing but expand the boundary of wellbeing measurement to a broader dimensions including psychological, community and environmental aspects. This will enhance the better understanding of happiness and wellbeing, its measurement and determinants.

2.2 The evolution of terminology

Traditionally, economists and other scholars measure a nation's progress and prosperity by looking at Gross Domestic Product (GDP). However, the ultimate goal of nations and human life is not just wealth. Lane (2000) claims that three ultimate goals of one's life are subjective wellbeing, human development (which is taken to include virtue), and justice. Wellbeing definition has been evolved which can be concluded as shown in figure 2.1.

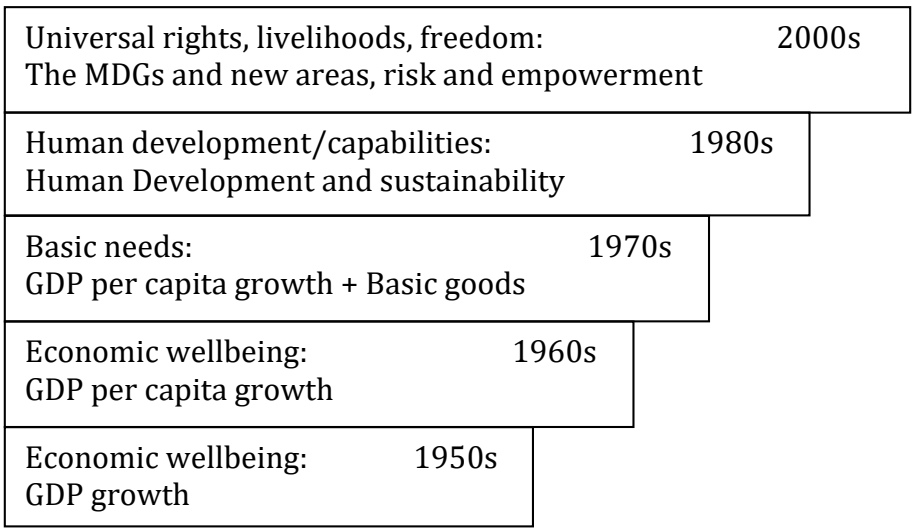


Figure 2.1 Evolution of wellbeing terminology

The evolution of wellbeing has been developed from economic strand at the early stage. Economic growth, in the 1950s the era of high development theory, was believed to be a powerful tool for poverty alleviation and the enhancement of wellbeing by the mechanism of the effect of trickle-down effect (Bourguignon et al 2002). The growth in Gross Domestic Product or GDP growth was an indicator for measuring wellbeing at that time (Sumner 2004, p. 3). GDP growth dominated the measurement of the quality of life with a little change to GDP growth per capita. However, the rise in the emphasis of raising standards of living in the 1960s led to more attention to social side of human wellbeing. The study of Bauere (1966) and Seers (1969) urged and challenged how development was measured and also raised the issue of basic needs.

Another shift in 1970s in broadening the definition of wellbeing is by adding the satisfaction of basic needs-physical necessities such as food, shelter and public goods, as well as the means to acquire these through employment into account (Sumner 2004). The failure of growth without showing trickle-down effect increased interest in the basic needs approach. A significant outcome was an invention of physical quality of life index (PQLI) by Morris (1979). Wellbeing, for the first time, was equated to non-economic account but took account of life expectancy at birth, infant mortality, and adult literacy instead. Several reports followed this path and shifted wellbeing further away from economic determinism. Those

included the publication of the Brant Report in 1980, World Development Report (WDR) in 1980.

The integration of economic and non-economic perspective provided a new concept of wellbeing focusing on human development. The UNDP's Human Development Report (HDR) was published since 1990. The core of wellbeing perspective from UNDP's HDR, WDR was related to Sen's idea. Wellbeing was defined as the process of enlarging people's choices (UNDP 1990, p. 1). From this terminology, wellbeing was shifted from means-focus to ends-focus. The HDI in HDR and the WDR 2000 influenced the acceptance of a multi-faceted model of wellbeing.

In order to clarify wellbeing of the local experiences, the UN Millennium Development Goals or MDG added new right-based approaches on development and emphasised locally-based definitions of wellbeing. This as a result produced new approaches such as sustainable livelihood approach (SLA) by Chambers and Conway (1991), and participatory poverty assessments (PPA) by World Bank (1992). As can be seen, poverty and wellbeing definition has been developed from purely economic to broader definition including non-economic aspects. This affects approaches for measuring wellbeing. In sum, a shift or development of wellbeing definition is a key factor for selecting an appropriate approach in order to measure and understand wellbeing.

2.3 Wellbeing concepts

Wellbeing is a state of mind and being and has a psychological and spiritual dimension as a mental state of harmony, happiness and peace of mind (Narayan et al 2000). According to Narayan (2000); Diener et al (1997, 1999); and Van Praag, Frijters, and Ferrer-i-carbonell (2002), wellbeing is multidimensional, existing across continents, countries, contexts, and types of people. A good quality of life includes:

1. Material wellbeing which is often expressed as having enough food, assets and work
2. Bodily wellbeing which includes being strong, well and looking good; being well and healthy, access to health services, a healthy and strong body, good appearance, being able to dress and appear well, and physical environment

3. Social wellbeing including caring for and settling children, having self-respect, peace and good relations in the family and community. Being able to care for, bring up, marry and settle children. Having self-respect and dignity, peace, harmony and good relations in the family and the community

4. Having security and confidence in the future, including civil peace, a physically safe and secure environment, personal physical security, lawfulness and access to justice, security in old age and confidence in the future.

5. Having freedom of choice and action including being able to help other people in the community.

According to the study of Hird (2003), wellbeing consists of two main categories: objective and subjective wellbeing (See Figure 2.2). Hird also suggests that the area of psychological wellbeing or positive mental health needs to be explored in more detail.

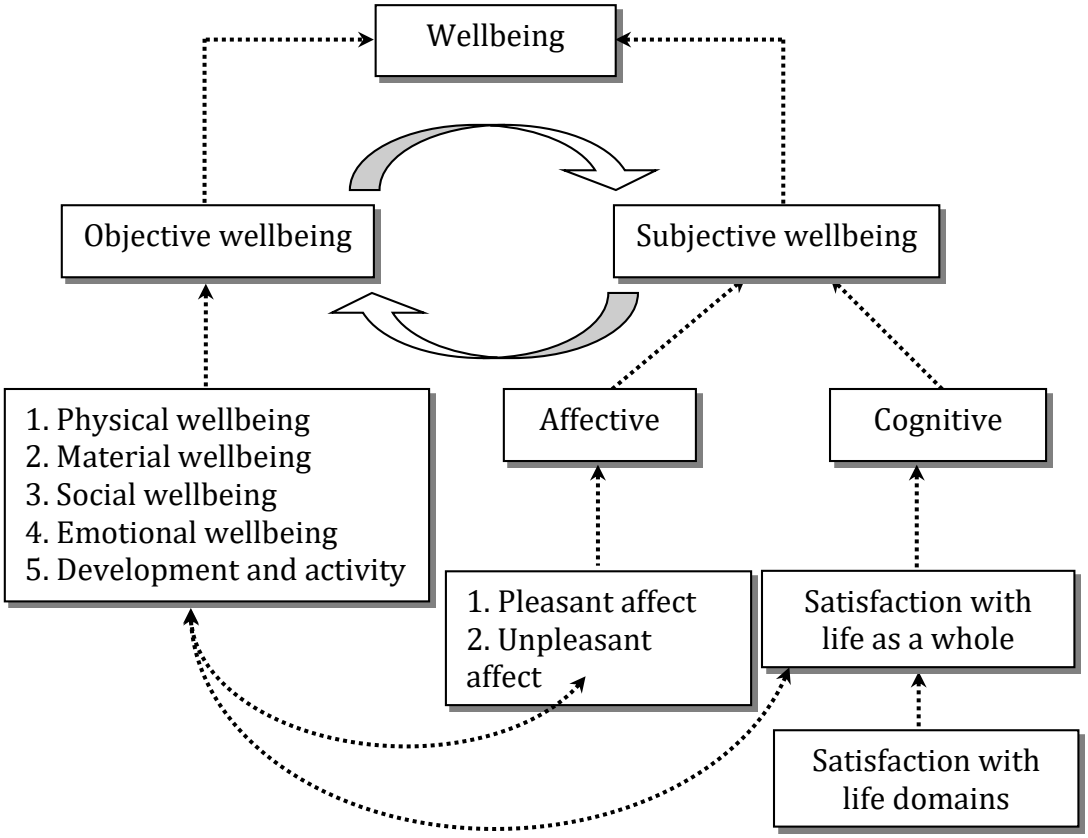


Figure 2.2 Wellbeing diagram
Source: Adapted from Hird, 2003.

From figure 2, objective wellbeing is measured by five indicators which are derived from the overlap among researchers (reported by Felce and Perry, 1995) on relevant domains that make up wellbeing. Another aspect of wellbeing and the one

that forms the main argument of this paper is the notion of subjective wellbeing. It refers to people's judgments about their own state concerning their enduring mood such as happiness as well as their assessment of the self-including satisfaction with one's physical and mental health. Human functioning[1] which refers to the relation between the material and psychosocial environment, (for example life satisfaction, work satisfaction) is also an important aspect of this subjective wellbeing (Siegrist, 2003).

Diener (1994) mentioned that life satisfaction is one of three components of subjective wellbeing which include people's longer-term levels of pleasant affect, lack of unpleasant affect, and life satisfaction. He argued that people evaluate their wellbeing or what occurs in their lives with their moods and emotions which are called *affect.*

According to Diener's study, subjective wellbeing is divided into three divisions with sub-divisions as shown in table 1. In the late 1980s, however, most research on subjective wellbeing has become synonymous with hedonic wellbeing or happiness (Kahneman et al., 1999). This is a prejudice to equate subjective wellbeing with happiness (Ryff, 1898) because in fact subjective wellbeing is a multidimensional concept and related to many factors (Keyes, 2005). Thus, there are attempts to measure subjective wellbeing with different methods.

Table 2.1 Components of subjective wellbeing

Pleasant affect	Unpleasant affect	Life satisfaction	Domain satisfactions
-Joy	-Guilt and shame	-Desire to change life	-Work
-Elation	-Sadness	-Satisfaction with current life	-Family
-Contentment	-Anxiety and worry	-Satisfaction with past	-Leisure health
-Pride	-Anger	-Satisfaction with future	-Finances
-Affection	-Stress	-Significant others' views of	-Self
-Happiness	-Depression	one's life	
-Ecstasy	-Envy		

Source: Diener et al. (1999).

[1] A functioning is an achievement of a person: what she or he manages to do or be. It reflects, as it were, a part of the state of that person (Sen, 1985, p.10).

Measuring wellbeing

A substantial literature has developed on the measurement of wellbeing and happiness. A number of survey measures which focus on self-rated happiness and life-satisfaction have been found to be reliable and valid (Diener et al., 2009). A number of these measures are summarized in Table 2. The inclusion of items related to happiness and satisfaction with life in the World Values Survey has resulted in the accumulation of national normative data for countries containing almost ninety percent of the world's population for five waves between 1981 and 2007 (Ingelhart et al., 2008). As a result of this work there is substantial normative data available on happiness and life-satisfaction in a variety of cultures and stages of national development. The newly developed Gallup-Healthways Wellbeing Index produces a daily index of wellbeing in the US based on a sample of 1000 adults on six broad scales- life evaluation, emotional health, physical health, healthy behaviours, work environment and basic access (Gallup-Healthways, 2008). The Gallup-Healthways index is an example of a survey-based tool which attempts to measure a broad framework of wellbeing and key contributors. A broader multi-nation framework for wellbeing-based national accounts has been produced by the New Economics Foundation (Marks, 2008; New Economics Foundation, 2009). This framework utilizes measures from a European survey and includes a variety of sub-indices which can be combined into one index. The individual components were- emotional wellbeing, satisfying life, vitality, resilience and self-esteem, positive functioning, supportive relationships and trust/belonging.

Early measuring subjective wellbeing: Hedonic view

Measuring subjective wellbeing, happiness or life satisfaction is a complex process and can be measured in different ways. The most obvious way is to survey individuals in a random sample of households and ask them about their feelings and general life satisfaction.

One renowned example of a single item question on a three-point scale is the General Social Surveys (Davis, Smith, and Marsden, 2001), which asks: “Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?” Another prominent example is to measure subjective wellbeing with life satisfaction assessment in the World Values Survey

with this question. “All things considered, how satisfied are you with your life as a whole these days?” Similarly, Eurobarometer Surveys is a well-known example of life satisfaction survey, asks a similar question: “On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?”

Diener et al. (1984) introduced the Satisfaction with Life Scale (SWLS) in order to measure subjective wellbeing with five statements with which the respondents may agree or disagree.

__ 1. In most ways my life is close to my ideal.
__ 2. The conditions of my life are excellent.
__ 3. I am satisfied with my life.
__ 4. So far I have gotten the important things I want in life.
__ 5. If I could live my life over, I would change almost nothing.

Using the 1-7 scale to indicate agreement with each item.

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neither agree nor disagree
5 = slightly agree
6 = agree
7 = strongly agree

Diener’s approach is one of the most famous techniques to capture subjective wellbeing of people, however, the measurements which attempt to collect perceptions of avowed happiness and satisfaction with life, and the balance of pleasant and unpleasant affects in one’s immediate experience cannot embrace all dimensions of subjective wellbeing. For example, with respect to previous studies, the relationship between income and wellbeing are discussed, such as:

- Are people with high income at a given point in time happier than those with low income?
- Does an increase in income over time raise the quality of life?
- Are people in urban more satisfied with their lives than those in rural areas?

Hedonic vs Eudaimonic: two approaches comparison

The study of subjective wellbeing has been divided into two streams of research, hedonic and eudaimonic approach (Ryan and Deci 2001, Keyes 2006; Kashdan, Uswatte and Julian, 2006). The hedonic approach emphasises that humans search

for pleasure or happiness. This approach is reflected in the stream of research on *emotional wellbeing* and represents human concerns with maximizing pleasant feelings while minimizing unpleasant feelings (Cantril, 1965; Bradburn, 1969; Bryant and Veroff, 1982; Diener et al., 1985; Lucas et al, 1996; Shmotkin, 1998; Keyes, 2007). In contrast, the eudaimonic view focuses on the fulfilment of one's true nature such as self-actualisation[2] and commitment to socially shared goals (Fave and Massimini, 2005). Ryff (1989) states that eudaimonic view is based on *psychological wellbeing,* Keyes (1998) mentions that this approach is in the stream of *social wellbeing* which reflects how well individuals see themselves functioning in life.

Aristotle draws another distinction between pleasant feelings derived from activities we do just because they give us pleasure and activities that are an expression of the best within ourselves (Ryff, Singer, and Love, 2004). Pleasure from the eudaimonic viewpoint comes from doing things in life that ask us to be the best in life we can be (doing what is worth doing) or to live in accordance with one's 'True Self' or *daimon* (Waterman, 1993), while pleasant feelings in hedonic aspect come from doing activities which give us pleasure, feeling relaxed, and away from problems. Thus, eudaimonic view is more than happy and without problems but it is related to feeling challenged to activities that leads to personal growth and development (van Dierendonch and Mohan, 2007). Similarly to Waterman (1993) which states that eudaimonia occurs when people's life activities are most fitting with deeply held values and are fully engaged which make people feel alive and authentic, existing as who they really are (Ryan and Deci, 2001). This state is called personal expressiveness (PE). From empirical studies, PE was more strongly related to activities that afforded personal growth and development than hedonic measures.

Thus, we can say that hedonic view focuses on pleasure, happiness and the satisfaction of human desires whereas eudaimonic conception of wellbeing concerns about realisation of one's true potential as a human being.

[2] This is similar to some modern psychological wellbeing concepts including the characterisation of the individuation process by Jung (1933), the model of psychosocial development by Erikson (1959), the fully functioning person by Rogers (1961), the formulation of maturity by Allport (1961), self-actualisation by Maslow (1968).

When we compare the outcome between applying hedonic and eudaimonic approach according to Aristotle's critic on hedonic happiness, hedonic aspect is only subjectively felt and whose satisfaction leads to momentary pleasure. This subjective felt is being harmful to human growth while eudaimonia being in accordance with the requirements of human nature (Ryan and Deci, 2001).

Ryff's study (1989) introduced six dimensions for measurement of psychological wellbeing. These include:

1) Self-acceptance, the capacity to see and accept one's strengths and weaknesses

2) Purpose in life, having goals and objective s that give life meaning and direction

3) Personal growth, feeling that personal talents and potential are being realised overtime

4) Positive relations with others, having close, valued connections with significant others

5) Environmental mastery, being able to manage the demands of everyday life

6) Autonomy, having the strength to follow personal convictions, even if they go against conventional wisdom.

These dimensions encompass a breadth of wellbeing which confirms that the eudaimonic view focuses on human concerns with developing abilities and capacities toward becoming a more fully functioning person and citizen (Keyes 2007). In order to study these dimensions the Scale of Psychological Wellbeing (SPWB), invented by Ryff, is employed, which contribute to the assessment of a person's level of positive functioning and wellbeing. In addition, Ryff and Singer (1998) invented another framework to analyse eudaimonic wellbeing, Self-determination theory (SDT). This concept includes three main psychological needs-autonomy, competence, and relatedness (Ryan and Deci 2001).

It is clear that the eudaimonic approach is a broader view of assessing subjective wellbeing compared to hedonic approach. It contains a wide range of measurement which can be linked to the **Capability Approach** (a framework developed by Amartya Sen and Martha Nussbaum for evaluating social states in terms of human

well-being or welfare). It emphasises functional capabilities or "substantial freedoms", such as the ability to live to old age, engage in economic transactions, or participate in political activities. These are constructed in terms of the substantive freedoms people have reason to value, instead of utility (happiness, desire-fulfilment or choice) or access to resources (income, commodities, assets) (Alkire, 2002). From the hedonic perspective deprivation of capabilities in the realms of economic capabilities (such as the ability to earn income, to consume, to have material wellbeing and social status), human capabilities (health, education, nutrition, water and shelter), political (human rights), socio-cultural, and protective capabilities (abilities to withstand economic and external shocks), may harm subjective wellbeing in hedonic aspect. On the other hand, consider eudaimonia, this approach is similar to Sen's capabilities approach. Capabilities approach focuses on freedom to achieve **valuable beings and doings**. Two main ideas of Sen's capabilities approach are freedom and valuable beings and doings which Sen called *functionings*. This idea is equivalent to eudaimonic view in terms of realizing individual talents leading to true happiness.

Hedonic and Eudaimonic: integration and complementation

Although there are some differences between the two approaches in probing subjective wellbeing, there are some degrees of overlapping which complement each other, providing a better comprehension of subjective wellbeing. According to the study of Compton et al. (1996), found that the hedonic and eudaimonic foci are both overlapping and distinct and that an understanding of wellbeing may be augmented by measuring it in differentiated ways. In the previous study, subjective wellbeing was assessed by asking people about positive and negative emotions and life satisfaction with different types of inquiry concerning the causes, consequences, and dynamics of wellbeing. However, using only hedonic approach cannot gather all facets of subjective wellbeing. More contemporary research, as a result, constructed scales[3] for assessing subjective wellbeing in both approaches. For example, Kashdan, Uswatte, and Julian (2005), used daily reports on positive affect (PA) and negative affect (NA) to assess *"Daily hedonic wellbeing"* of Vietnam War

[3] There are also scales that try to measure 'wellbeing as a whole', such as Antonovsky's Sense of Coherence (SoC) Scale (Antonovsky 1987) and the Quality of Life Profile (QoLP). Both of these are worth a further look.

veterans. Also, they employed the Rosenberg Self-Esteem Scale to assess *"Daily eudaimonic wellbeing"* using questions such as "On the whole, I am satisfied with myself" to assess self-esteem, or a statement "Found our self doing things purely for the interest and enjoyment of doing them" to assess self-determined pursuit of novelty and challenge.

Another good example of assessing subjective wellbeing is the study of Keyes (2007) on mental health of American teenagers. He employed self descriptive statements to measure psychosocial functioning of respondents. For instance, statements like

"I have a lot to be proud of" or "I can do things as well as most people".

These examples show how we can assess subjective wellbeing in both approaches. The overall concept of hedonic and eudaimonic approaches are shown in figure 3. The most important issue is how to develop questions that best assess subjective wellbeing with high internal reliability and that can explain subjective wellbeing in different contexts, between-person and within-person influences.

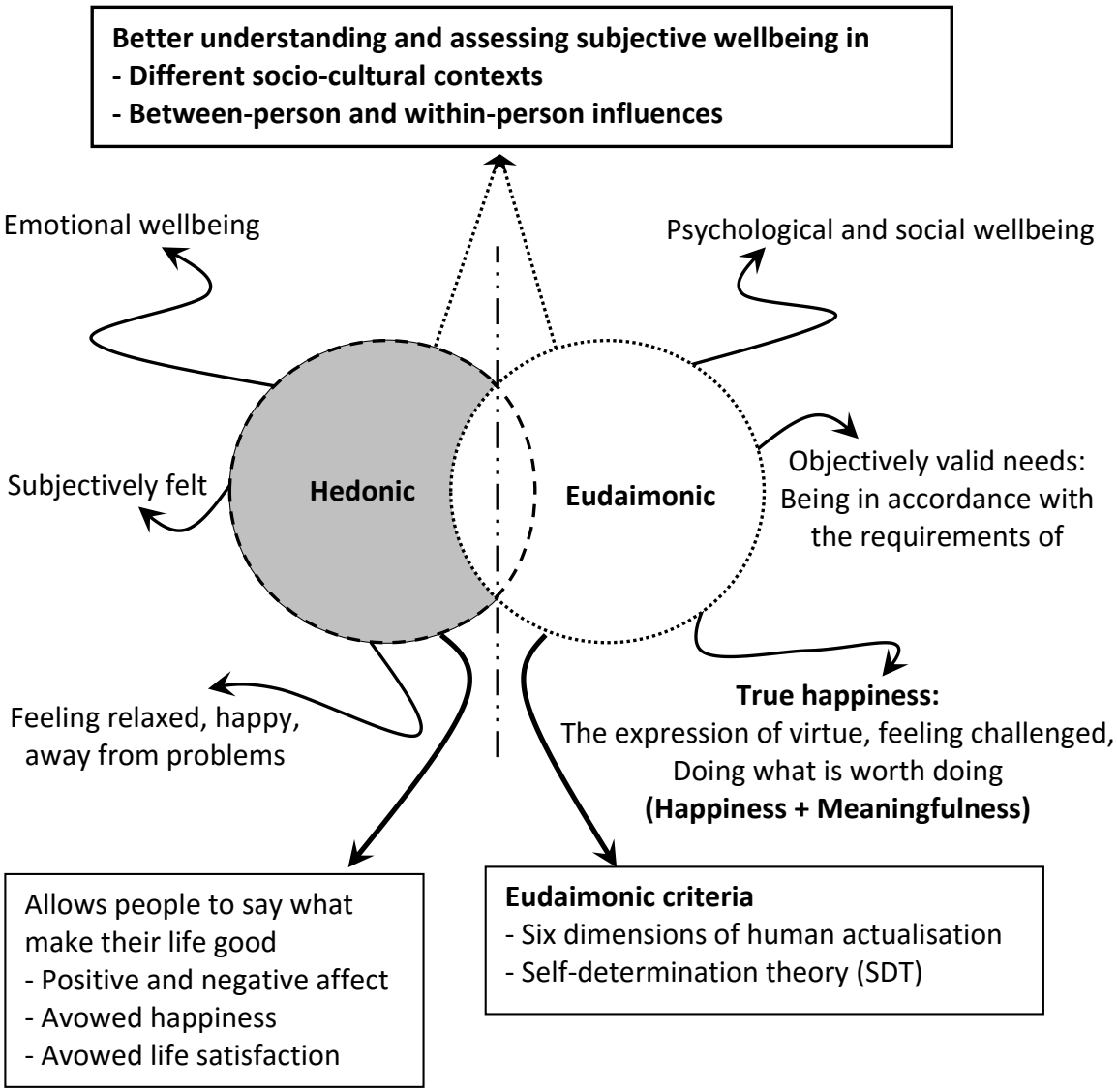


Figure 2.3 Hedonic and eudaimonic diagram
Source: own summary

According to this study, Eudaimonic and hedonic approaches are very useful in order to evaluate subjective wellbeing of clients. This concept helps understand wider factors which can influence one's wellbeing

2.4 Wellbeing determinants and empirical evidence

Wellbeing and happiness literatures showed that wellbeing is influenced by several factors which can be distinguish into five main types:

1) Personality factors such as self-esteem, personal control, optimism
2) Socio-demographic factors such as age, gender, marital status, education
3) Economic factors such as individual income, unemployment
4) Contextual and situational factors such as working/health conditions
5) Institutional factors such as political participation right

In many Economics research, income has been taken into account to be a significant variable involved one's happiness. Ideally, people with higher income have more opportunities to achieve whatever they desire: in particular, they can buy more material goods and services. Moreover, they have a higher status in society. This assumption suggests that higher income, yields higher utility and therefore happiness, conversely the poor, who have lower levels of utility, are seen as unhappy. However, in many cases, there has been no increase in the number of "very happy" people in spite of living standards having more than doubled (Layard, 2005).

Most empirical studies show a significant correlation between income and subjective wellbeing. However, the correlations are quite weak due to the use of nominal and ordinal measure which leads to a low correlation. Several scholars (Blanchflower and Oswald 2000; Diener and Oishi 2000; Myers 2000; Kenny, 1999; Lane 1998; and Easterlin, 1974, 1995) have identified a striking and curious relationship: per-capita income in western countries like the United States, the United Kingdom, and Belgium, as well as Japan, has risen sharply in recent decades, whereas average happiness has stayed "virtually constant" or has even declined over the same period.

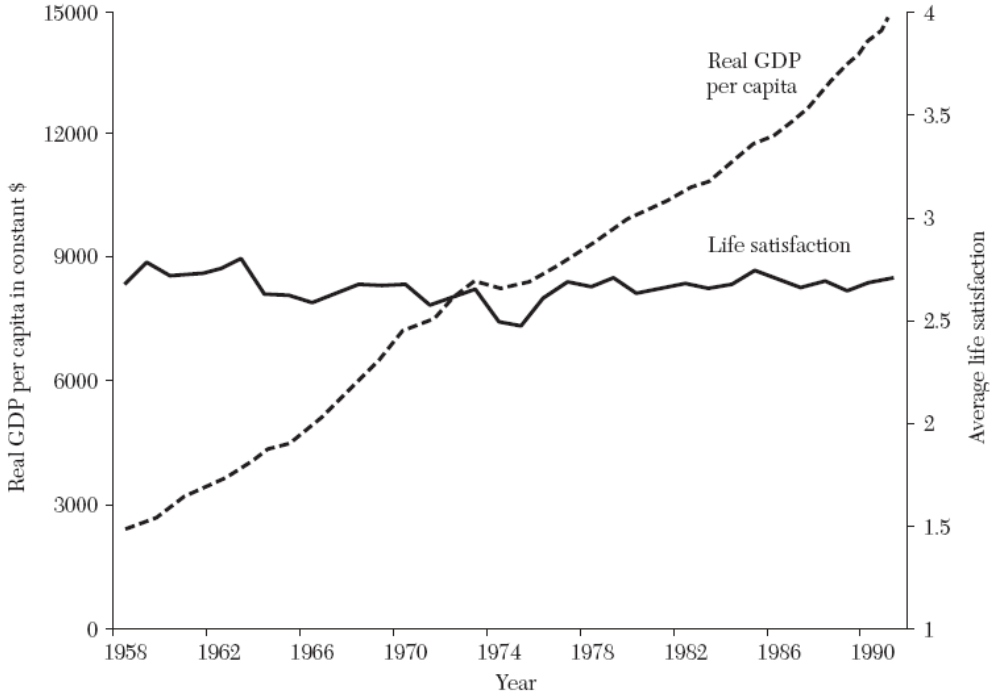


Figure 2.4 Satisfaction with life and income per capita in Japan 1958-1991
Source: Penn World Tables and World Database of Happiness, cited by Frey and Stutzer, 2002.

Graphically, the development of income and life satisfaction diverges like a pair of open scissors. Consider figure 4 for Japan, between 1958 and 1991, income per capita in Japan rose six-fold. The rise was reflected in almost all households having an indoor toilet, a washing machine, a telephone, a colour television, and a car (Easterlin, 2000). The open-scissors figure also shows that this tremendous rise in material well-being was *not* accompanied by an increase in average satisfaction with life. In 1958, average life satisfaction rated on a four point scale was 2.7. The scientific study of wellbeing has flourished since empirical research on well-being was launched in the 1960s via an interest in depicting quality of life (Campbell, Converse, and Rodgers, 1976). However with the limited scope of the hedonic approach becoming apparent, an interest in the increasing distinction between eudaimonic and hedonic aspects of wellbeing is being increasingly investigated.

Persons with higher income have more opportunities to achieve whatever they desire: in particular, they can buy more material goods and services. Moreover, they have a higher status in society. Higher income therefore yields higher utility, and conversely the poor are unhappy. Many studies attempt to explore this relationship shown in table 2.2.

Table 2.2 Effect sizes of income on subjective wellbeing

Study	Effect sizes on subjective wellbeing		
	1% rise in individual's income from cross-sectional estimation	1% rise in national income from time-series estimation	1% rise in national income from cross-sectional estimation
Easterlin (1995)	-	-	0.009
Blanchflower and Oswald (1999)	0.02	-	-
Diener and Oishi (2000)	0.005	0.022	0.010
Hagerty (2000)	0.005	0.009	-

Source: Adapted from Hagerty and Veenhoven, 2002.

Table 2 shows the effects of income in terms of gross domestic product per capita on happiness which is one element of subjective wellbeing using time-series and cross-sectional data. It is clear that all estimates are positive, contrary to the anti-growth theory that predicts a negative effect, and contrary to a pure adaptation model that forecasts zero long-term effect (Hagerty and Veenhoven, 2002). Table 2.3 shows other studies of income and subjective wellbeing correlation with different case studies

Table 2.3 Cross-sectional correlations within nations between income and subjective wellbeing

Study	Case study	Subjective wellbeing concept	Correlations
Conner et al. (1985)	Retired professors from Iowa, U.S.A.	Life satisfaction	0.24
Schyns (1997)	West Germany	Life satisfaction	0.06-0.15
Lachman and Weaver (1998)	Russian Federation	Life satisfaction	0.17-0.27
Biswas-Diener and Diener (2000)	United States	Life satisfaction	0.18
Diener and Oishi (2000)	Poor areas of Calcutta 19 nations	Life satisfaction Life satisfaction	0.45 0.13
Keith (1985)	U.S. older divorced U.S. older separated	Women and men's satisfaction with level of living	0.23 0.21
Blanchflower et al.(1993)	United States	Men's happiness Women's happiness	0.15 0.14
Brinkerhoff et al. (1997)	Village in India	Happiness Aggregate satisfaction	0.22 0.35
Hagerty (2000)	United States	Happiness	0.18
Mullis (1992)	United States males	Happy with life and domains	0.17
Diener et al. (1993)	United states	Affect balance (Circa, 1973) (Circa, 1983)	 0.13 0.12

All studies show a significant correlation between income and subjective wellbeing. However, the correlations are quite weak due to the use of nominal and ordinal measure which leads to a low correlation. But the correlation is relatively high in developing countries. This shows the higher effect of income on wellbeing for poor people when income provides basic necessary goods and better standard of living. Although income is an important factor affecting wellbeing, this study attempts to analyse the linkage between socio-demographic and economic factors on wellbeing. Income has been proved a significant relationship to happiness; however, a complexity in human behaviour and differences in certain circumstances also affect one's wellbeing.

2.5 Introducing a Thai perspective of wellbeing

Wellbeing is a widely used word embracing different ideas of how people lives are going through the interaction between their circumstances, activities and psychological resources (NEF, 2009). According to the five year project of WeD[4], wellbeing is a state of being with others, where human needs are met, where one can act meaningfully to pursue one's goals, an where one enjoys a satisfactory quality of life.

Well-being is one of most important aspect of our lives, as individuals and as societies. But despite unprecedented economic prosperity in the last 35 years we do not necessarily feel better individually or as communities. Conceptualisation of wellbeing definition is multiplicity and involved a dynamic process. This is not an exceptional for Thai interpretation of wellbeing. An understanding of wellbeing in Thai society has developed from time to time and wellbeing was emphasised as an important goal in the 8th National Economic and Social Development Plan or NESDP from 1997 to 2001.

Initially *Kin Dee Yoo Dee*[5] is an equivalent word commonly used for referring to the nature of wellbeing. This word reflects Thai culture and the way of thinking for their livelihood. Wellbeing, from using this word, is when one lives in comfort condition and happy. *Kin Dee*, which means eat well, is used to show the state of happiness of individuals or society. The belief of eating well equates being happy is in Thai culture. Therefore, one who eats well or have enough to eat is socially accepted that one is happy and has a good life. However, one's consumption level, according to this term, has to be suited to one's economic power and social status and the derivation of one's consumption should be ethical.

A dramatic socio-economic change in Thailand distorted the idea of sufficient consumption to consumerism. Comparing this terminology to Economics' consumption and utility concepts, the higher consumption level creates more utility and satisfaction. The boundless demand of people and a comparison society creates

[4] WeD was a research group on wellbeing in developing countries supported by the Economic and Social Research Council (ESRC). This research group was in a department of Economics and International Development, University of Bath.

[5] To understand this word, it is easy to extract the meaning of each word. *Kin* means to eat, *Yoo* means to live, and *Dee* means good or well.

an excess expenditure for individuals and households. Finally, *Kin Dee* or eat well concept has changed to unlimited consumption and imitation of consumerism which led to the wrong way of development or the opposite path to wellbeing. This change has affected the perception and characterisation of wellbeing in Thailand.

Recently, Thais have used the English word, "wellbeing", to describe the state of well-living and being happy with life. The Thai phrase for wellbeing is rather subtle – *Kwam Yoo Dee Mee Suk* [6]. *Yoo Dee* refers to objective dimension of wellbeing. It means living in a decent condition such as living in a nice house, having nutritious food, and being healthy without any kind of diseases. The second part of wellbeing, *Mee Suk*, signifies the subjective aspect of wellbeing. In Thai perspective, *Mee Suk* or *Mee Kwam Suk* means being happy or being satisfied with life.

National Economic and Social Development Board (NESDB) was established in 1950 as the National Economic Board (NEB) and renamed as the National Economic Development Board (NEDB) in 1959. In 1972 under the Prime Minister's Office, it was reformed to the National Economic and Social Development Board (NESDB).

The NESDB indentifies the nature of wellbeing in the context of Thailand, which is the core of the 8th and 9th national economic development plan, as

> *"Wellbeing means having good physical and mental health, education, employment and sufficient income, having a supportive and stable family in a good living environment and a good system of governance"*
>
> (NESDB, 2005. p.1)

The wellbeing concept from the NESDB above was developed and inspired by an idea of the last impact of development by Professor Amarthya Sen (1985). The meaning of wellbeing according to the definition of the NESDB covers seven dimensions of wellbeing which are health, knowledge or literacy, working life, income and distribution, family life, environment, and good governance. It is claimed

[6] This word comprises of five single words. Kwam is a prefix for making a compound noun word. *Yoo* means to live, *Dee* means good or well, *Mee* means to have, and *Suk* means happiness. Thus, these five words when combined form the equivalent meaning of wellbeing which literally means the state of living well and being happy.

by the NESDB that wellbeing of Thai people will be improved by developing all seven dimensions at the same time (NESDB, 2005).

It is clear that wellbeing in the context of Thailand has been developed and the wellbeing definition is not focused just the objective wellbeing but also subjective dimension which is shown as in figure 2.1.

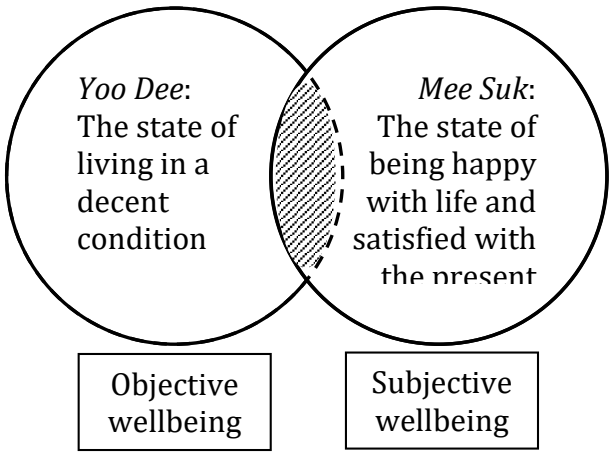


Figure 2.5 Wellbeing in Thai definition

2.6 The empirics of wellbeing perspective in Thai context

The perception of wellbeing in Thailand has been changed and developed all the time; however, very few studies have been conducted in order to conceptualise the wellbeing perspective. A study of Paitoonpong (1999) attempted to reflect how people in different regions perceive their wellbeing. The results showed that wellbeing and poverty perception in Thailand was varied among discussion groups in different regions. The example of wellbeing and poverty perception is shown in the table below.

Table 2.4 Wellbeing perception comparison between regions

Region	Wellbeing or Rich	Illbeing or Poor
South	-Live comfortably -No need to struggle -Have many ways to earn a living -Have plenty of lands, gardens -Able to provide loan -Able to buy everything wanted -Pay cash -Have heritage or money	-Earn their livings day by day -Buy things on credit -Have few pieces of lands -Have land for dwelling only
Northeast	-Own a small plot of land between 5-10 rai (2-4 acres) -Indebted to a few banks	-Lives have been worsen off -Almost have no food, live in dire stage of poverty -Hardship in eating and living
Bangkok	-Own very little land -Do not produce enough for themselves -Earn daily wages -Work in other provinces for months -loans are provided for because there are enough assets for collateral guarantee	-Sometimes there is enough to eat, sometimes there isn't -No money -No work -Indebted -Renting their farmland -No money, depending on others such as relatives, children and elderly

Source: Extracted from Paitoonpong, 1999.

The example from table 2.4 showed that there were some similarities and differences between wellbeing perceptions in regions of Thailand. According to the result, it is interesting that the definition of wellbeing and poverty was mainly focused on economic dimension. This could be explained by the time this research was conducted when the evolution of wellbeing in Thailand still emphasised the importance of economic and objective dimension and was in a process of paradigm change to the wider definition. Another reason maybe the sample of this study led to a different perspective of wellbeing. Comparing to another empirical study of Ingersoll-Dayton et al. (2001) which was focused on psychological wellbeing, the dimension of wellbeing among Thai elderly was revealed. It was found that the definition of wellbeing consisted of five dimensions: Harmony, Interdependence, Acceptance, Respect, and Enjoyment.

Table 2.5 Dimension of wellbeing among Thai elderly

Wellbeing dimension	Description
Harmony	Experiencing peaceful and happy interactions with and among family members, friends, and neighbours; the success of one's children in their work responsibilities and family relationship.
Interdependence	Providing assistance to and receiving assistance from family members and others.
Acceptance	Relinquishing upsetting thoughts and accepting life circumstance.
Respect	Feeling one's advice is heeded and one's wisdom is appreciated.
Enjoyment	Appreciating simple pleasures that involve others as well as solitary pursuits.

Source: Ingersoll-Dayton et al., 2001.

According to the result in table 2.5, it indicates that in order to identify the definition of wellbeing, it is very important to take into account of various factors. Different age groups, location, economic and social status; for example, had an influence on how people define wellbeing. The result above shows another angle of wellbeing which is focused on psychological dimension rather than economic spectrum.

2.7 Conclusion

Theoretical discussion and some empirical results from wellbeing and happiness literatures, Thai perspective in general and some empirical result from Libong case study as discussed in this chapter help construct a better understanding in the concept of wellbeing. This idea of wellbeing from this chapter also is a platform in order to operate this research to investigate the impact of microfinance programme. In the next chapter will be a discussion of impact assessment and how mixed methods can be utilised for measuring wider impact.

Chapter 3
Research Methodology

3.1 Introduction

As can be seen from the previous chapter, there is an incessant development of impact assessment methodology in order to seek a better explanation of the real impact chain. To connect to the present study, this chapter provides a discussion of how this research is operationalised in order to explore the impact of The National Village and Urban Community Fund (NVUCF) programme on poverty reduction and wellbeing in the case of rural Thailand. This chapter discusses the methodological approach used in this research including the chosen research methods, the justification for each method, details of samples and sampling process, a whole process of data collection preparation and fieldwork operation, and how to analyse data.

The main research question enquires in what way the NVUCF programme affects poverty incidence and wellbeing of people in rural Thailand. Subsidiary questions include whether this programme helps improve wellbeing and reduces vulnerability of borrowers, how borrowers' loan spending behaviour relates to the reduction of poverty incidence and the changes in wellbeing. Mixed methods of impact assessment will be constructed to answer these questions. Also, multidimensional poverty and wellbeing indicators and proxies which are considered suitable for this case study have been selected for offering opportunity to explore a more rigorous, plausible, and accurate impact of this economic and social intervention programme on individuals, households, and the community development, are discussed in detail in this chapter.

The structure of the methodology part is divided into eight sections. Firstly, the research paradigm is raised and described, followed by the impact assessment design used in the research in the second part. The justification of the research site selection, population and sampling process are presented in the following section. Then, data collection and research tools are discussed in the next section. The

following section consists of data analysis procedures and finally some ethical and general issues related to the research will be raised.

3.2 Research fundamental setting

One of the ultimate aims of this study is to investigate a plausible impact of the NVUCF programme intervention on the selected communities and explain patterns and mechanisms in the communities following this intervention. To achieve this aim, it is very difficult to select an optimum method or single research methodology in order to identify the genuine impact. Thus, plurality of methods is useful to strengthen the impact results. Positivism and Interpretivism paradigm have been adopted and have led to the research methods for this study. According to Bryman (2009), positivism is a contrasting epistemology to interpretivism. However, this study does not solely deal with objective indicators but is also involved with wellbeing, especially subjective wellbeing related to individuals' perspective. Thus, it is essential to capture respondent behavioural changes by understanding their actions using means of interpretivism on one hand, accompanied by positivist orthodoxy on the other. The combination of two paradigms not only helps us to better understand social phenomena but also helps to explore the impact on individuals and social behaviour. Quantitative method is weak in terms of understanding the context or setting. On the other hand, biases can occur by using qualitative data analysis. Thus, using mixed methods help compliment the results from quantitative data analysis for better understanding the issue and provides a broader perspective results of the overall research problem (Creswell, 2013; Bergman, 2008; Johson and Onwuegbuzie, 2004)

3.3 Designing an impact assessment

This present empirical research is a combination of both quantitative and qualitative methods. The quantitative method gathers information from large samples leads to a clear method for inferring correlation, causality and generalisability. Qualitative analysis is employed for cross-checking finding with rich information from respondents. The main research design for this study adopts a matched comparison and a retrospective design.

3.3.1 Matched comparative design

In order to validate the impact assessment, a matched comparison was employed. This design is useful for impact assessment in terms of identification of the differences between clients and non-clients of the funds and also helps compare the impact between different funds. The domains impacts are firstly compared between clients and non-clients in one community. Then it was compared to another neighbouring community having similar citizen socio-demographic characteristics. To better understand the patterns and mechanisms of the wider impact, this study finally provided a comparison between different funds. The details of the communities and fund comparison will be explained in detail in the next chapter.

3.3.2 Retrospective design

A Retrospective design was adopted for this research which gathered data at one time and traced the difference into the past. In this design, the researcher gathered the data from funds' clients and non-clients and classified the respondents simultaneously into the group categories according socio-economic criteria. The respondents were asked about their socio-economic status and wellbeing before and after participating the programmes. This design has advantages in shorter time use and is easy for sampling and locating clients. Besides, from this design non-client group helps to attribute changes between the groups to programme participation (Barnes and Sebstad, 2000: 40). However, this design may cause over- or under-estimation of impacts and it is difficult to determine the extent of similarity between clients and non-clients at the beginning of the reference period. To solve these weaknesses, triangulation with other qualitative methods and matched comparison with the selected similar cases will be adopted to raise the validity and reliability of the study.

3.4 Research site selection, samples and sampling procedure

3.4.1 Research site selection

To maximise the effectiveness of the social impact analysis, Libong Island in Trang province, Thailand was selected for this study due to the suitable characteristics of the site. The selected villages take the form of a single township where people share a Muslim culture and tradition. Their social dynamics and isolation from the

mainland activity make them susceptible to impacts and it is likely that interventions and changes will affect their behaviours and livelihood. This characteristic creates the advantage for social impact analysis which is normally applied to small communities in terms of single townships or small islands (Bowles, 1983). Two villages (Ban Batupute and Ban Saikaew) were selected to provide the plausible comparable conditions for a matched comparison method in a quasi-experimental design.

Before entering the village, the decision for choosing the research site was on the basis of maximisation the effectiveness of the economic and social impact analysis. Four considerations were taken into account in choosing Libong Island for the research site of this study. The main criteria for the decision are given below:

1) Acquaintance with the site

The first reason for site selection in order to achieve the aim of effective impact evaluation is that the researcher should be familiar with the site. This creates the best opportunity for the researcher to explore the impact of development interventions within a shorter time. In my case, I have been to this island once in 2005 so I have experienced the local socio-economic and some cultural aspects of the area. Additionally, the island is situated in the province where I was born so I have a deep understanding of language, tradition and how to communicate with local people there, which is an advantage for doing fieldwork in this island.

2) Rurality and isolation criteria

Villages in Libong Island were selected for their rural characteristics. People are living in or characteristic of farming or country life (Princeton University, 2006) with the lack or inadequate of infrastructure such as the absent of water supply system, the restriction of electricity service, and the muddy and cracked roads. Additionally, the island is detached from the mainland and it is difficult to commute to the city centre. This isolation diminishes the influences from the outside community on people's lives. This provides opportunity for impact evaluation to be conducted in an easier and more efficient way.

According to preliminary observation, three villages on the mainland (Moo 3, 6, and 8) are influenced by external factors such as urbanisation, migration and the linkage to Muang Kantang, the nearest biggest city. This creates external undesirable

impacts on people in that area which affects the reliability and accuracy of impact evaluation. Similarly, Moo 2 Ban Koh Muk on Muk Island is highly related to outside economy as it is the main tourist destination in this vicinity. Since there is extreme fluctuation on this island, it is considered that Ban Koh Muk is not suitable for impact evaluation. Thus, the researcher decided to study only villages on Libong Island.

3) Noise minimisation

To assess a plausible impact of development intervention, external factors which influence the analysis process or noise must be mitigated or removed. As a result of the rurality of the site and the isolation of the island itself, external interferences from outside selected communities are considerably low which can be seen from the low level of connection between communities on the island and the communities on the mainland.

4) Single township and unique culture

Approximately 99.9 percent of the population on this island is Muslim and the island consists of a single township in which people on the island share a unique culture and tradition. Thus, even small interventions or changes easily affect their ways of living and it is easier to capture their behaviour and changes in activities. This characteristic creates the advantage for social impact analysis which is normally applied to small communities in terms of single townships or small islands (Bowles, 1983).

3.4.2 Research samples and sampling procedure

The selected samples for this study are categorised into three groups which were considered to be appropriate to the required data and data collection methods.

1) Samples for semi-structured interviews

The first group is the NVUCF clients and non-clients from two villages, Ban Batupute and Ban Saikaew. The other two villages were not been selected due to the collapse of the funds and there was no secondary information from the committee of the fund. The second group sample is the saving group clients and non-clients from all villages in the island. Group characteristics and more detail will be explained and discussed in chapter five. The first two group samples will be used for comparing to the NVUCF programme in terms of the differences in individual and social

participation, empowerment, and social capital formation. Number of samples in each group is shown in the table below.

Table 3.1 Samples for semi-structured interviews

Sample	Participants	Non-participants (Informal loans)
1. The NVUCF		
1.1 Moo 4 (Ban Batupute)	65	65
1.2 Moo 7 (Ban Saikaew)	55	55
2. Savings group	120	149
Total	**240**	**269**

Sampling procedure for this group was done by using a simple random sampling method. The samples were randomly selected from the list of clients in case of ones who joined the funds. In case of non-clients, the names were picked from the list from the sub-district administration office which is the local organisation providing information of communities.

2) Focus group samples

These samples are groups of people involved in the NVUCF programme and the saving group fund including present and former clients of the funds and fund committee. Non-client focus groups were also included in order to compare the outcome of the funds whether the funds have caused any differences between participant and non-participant group. All focus groups were interviewed and participated in workshops using the MAPP[7] methods. For this sample, the focus groups were selected using purposive sampling method. All focus groups were selected aiming for gaining information about the impact from each fund. The focus groups have to be suitable representatives which provide reliable information. To get that outcome, the researcher asked respondents to form the group covering all beneficiary groups involved with the funds. All focus groups were asked to participate voluntarily in each category shown in table 3.2.

[7] MAPP stands for Method for Impact Assessment of Poverty Alleviation Projects. This method was developed on the basis of the effect model adopted by GTZ (German Agency for Technical Cooperation)'s Internal Evaluation Team and the DFID (Department for International Development)'s key social process.

Table 3.2 Focus group samples

Focus group	Group detail	(Numbers of group/ person per group)
1. Focus group I NVUCF	1.1 Present clients	(2/5)
	1.2 Former clients	(2/5)
	1.3 Treasurers	(2/2)
	1.4 The NVUCF committee	(2/5)
	1.5 The NVUCF non-clients	(2/5)
2. Focus group II LSGF	2.1 Seafood product group	(1/6)
	2.2 Organic fertiliser group	(1/5)
	2.3 Local fishery group	(2/6)
	2.4 Grouper aquaculture group	(1/5)
	2.5 Batik group	(1/5)
	2.6 Former clients	(1/5)
	2.6 The saving group non-clients	(2/5)
	2.7 The saving group committee	(1/5)

3) In-depth interview samples

The last group of samples is a group of key informants for the in-depth interview process. This group plays an important role in terms of gaining more information for impact assessment and cross-checking with the quantitative results. Rich data from in-depth interviews were collected from key people and stakeholders in the communities, people who are involved with the funds and also some judgments from local and external scholars who had experienced about the funds. The data collected from this group can be seen in the following table.

Table 3.3 In-depth interview samples

In-depth interview	Detail	Number
1. Key people and stakeholder	1.1 District Head (Kam Nan)	1
	1.2 Village Head (Poo Yai Ban)	2
	1.3 Village Head Assistant (Poo Chuay Poo Yai Ban)	3
	1.4 SAO officer	3
	1.5 Saving group leader	1
	1.6 Local Activist	1
	1.7 Community Organisation Network Head	1
	1.8 Developer and chief developer	2
2. The NVUCF client and non-client case studies	2.1 The NVUCF clients M. 4 (Ban Batupute)	5
	2.2 Non-clients M.4	5
	2.3 The NVUCF clients M. 7 (Ban Saikaew)	5
	2.2 Non-clients M.7	5
3. Saving group client and non-client case studies	3.1 Saving group clients	5
	3.2 Non-clients	5
4. Scholars and researchers	4.1 TDRI officer	2
	4.2 Local scholars	3
	4.3 University scholars	3

The sampling process for this sample is different in each group. Firstly, purposive sampling on the basis of pertinent criteria was employed for selecting key people in the community and stakeholders. This selection is on the basis of the principle of achieving the widest possible variance. Key informants in this group are selected with different functions or responsibility to the funds and in different situations as far as possible. For the second and the third groups, pertinent criteria selected from clients and non-clients of each fund on the basis of widest possible variance in order to represent all group characteristics. Both clients and non-clients will be selected using the pertinent criteria and a match between client and non-client of the programme will be used for selecting samples according to the mediating factors including gender, a residence in the same geographic location or area as the clients, and the similarity in occupation or have a microenterprise in the same sector as clients'.

The last group consists of the key informants which are local and external scholars with experience of the context and the area of study. The snowball method was

employed for sampling this group. One key informant was first selected and was asked for the names or lists of other key informants who could provide further helpful information. In this group of informants, they were interviewed more than once in order to generate concepts, theories and patterns of data. Theoretical sampling was taken into account while data were collected, coded and analysed for decision making and further data collection. This process helps to refine clearer ideas and formulate a better understanding in the community context.

3.5 Data collection and research tool preparation

3.5.1 Logical steps for impact assessment

There are three phases of data collection for this research.

Step 1 Preliminary quantitative mini-survey

This phase aims to formulate impact hypotheses and collect evidence on selected "basic indicators" related to poverty and wellbeing impact from the NVUCF programme and attempts to gather individual and household characteristics of villagers both clients and non-clients of the NVUCF programme and the savings group fund.

Step 2 Multi-disciplinary fieldwork

This stage attempts to validate hypotheses and probe on a set of narrower questions. The MAPP method will be employed for this stage in order to collect more detail data which will be analysed and triangulate to the quantitative results from step 1.

Step 3 In-depth and key informant interviews

Finally to analyse the impact of the programme, the sample from the first step will be selected for the in-depth and key informant interviews. All data in this stage will also be useful for the purpose of cross-checking with mini-survey and the MAPP method to identify the plausible impact results. The detail of the logical steps for impact assessment of this research is shown in table 3.4.

Table 3.4 Data collection plan

Month/Week	Activities	Outcome
Step 1 Preliminary quantitative mini-survey		
Jun/Week 1	- Prepare for fieldwork - Familiarisation with villagers	- A rapport with research participants.
Jun/Week 2	- Secondary data collection	- Related secondary data of clients' profiles and activities in the programme.
Jun/Week 3	Survey in village 1	
Jun/Week 4	Survey in village 1	- Basic indicators - General characteristics of the sample
Jul/Week1	Survey in village 1	
Jul/Week 2	Survey in village 2	
Jul/Week 3	Survey in village 2	
Jul/Week 4	Survey in village 2	
Step 2 Multi-disciplinary fieldwork using MAPP		
Aug/Week 1-2	- Life line analysis - Social trend analysis - Activity list	- Impact factors from the programme and from external factors - The importance and beneficiaries of programme activities
Aug/Week 3	- Influence matrix - Transect - Selecting samples for in-depth and key informant interview	- Attribution of impacts of programme activities - A sample for in-depth and key informant interview
Step 3 In-depth and key informant interviews		
Aug/Week 4	In-depth interview village 1	- Primary data from the interview of both clients and non-clients
Sep/Week 1	In-depth interview village 1	
Sep/Week 2	In-depth interview village 1	
Sep/Week 3	In-depth interview village 2	
Sep/Week 4	In-depth interview village 2	
Oct/Week 1	In-depth interview village 2	
Oct/Week 2	Key informant interview	- Primary data from the interview of experts and stakeholders in the village
Oct/Week 3	Key informant interview	
Oct/Week 4	Key informant interview	

3.5.2 Data collection stage and research tools

According to the data collection plan, practically the data collection process was divided into three phases.

1) Quantitative survey and secondary data collection

The first step is gathering data using quantitative survey. In the first two months of my fieldwork (June and July, 2008), I interviewed both clients and non-clients of the NVUCF programme and the saving group of the island using semi-structured interview and questionnaire.

All clients who received the loan from the NVUCF programme and the savings group were randomly selected and interviewed. The interview was conducted under conditions of informed consent with the contentment of participants. Prior to implementation, the questionnaire survey is piloted with 30 villagers in order to check the time for completion, the relevance and comprehensibility of the questions to avoid misunderstanding and missing value. Then, reliability analysis was conducted using Cronbach's alpha which is the most common form of internal consistency reliability coefficient. Finally, after checking and correcting the questionnaire, data collection first started in Moo 7 Ban Saikaew where I stayed following by Moo 4 Ban Batupute and finally the saving group clients.

Before entering the village, only Moo 7 and Moo 4 were set in the plan for data collection. These two villages are twin communities which can be seen by the identical in demographical and geographical characteristics. Thus, these two villages were selected for impact evaluation of the NVUCF interventions. The samples using for the interview is the ratio of 2:1 (2 clients of the savings group per one client of the NVUCF programme). The questionnaire with semi-structured interview was employed in the beginning of the research by asking questions to both clients and non-clients of the programmes. The following example questions indicate the specific information that was also recorded about the survey site or the operational area of this research:

- Is the site primarily urban, semi-urban, or rural?
- How far is it to a major urban area?
- What is the quality of the main roads serving the area?
- Does the site have piped public water?
- Does the site have electricity?
- What ethnic, religious, or caste groups are located at the site?
- What are the major sources of employment around the site?
- What is the topology and climate?
- What agricultural crops are grown in the area and what is the current season?

The aim of this tool is to identify the basic characteristics of the samples in each village in the broad area including socio-economic and the general changes in selected domains. The questionnaire is divided into five sections, explained below:

Section 1 is personal data section which aims to gather basic socio-demographic and basic economic information of respondents.

Section 2 provides details about family members of respondents including number of children and their characteristics.

Section 3 attempts to get details about the loan and use of loan, profits and savings of respondents.

Section 4 assesses impact of the loan in three levels: individual, household, and community level, with 20 indicators.

Section 5 continues assessing impact of the loan in subjective wellbeing dimension including happiness and subjective wellbeing indicators and emotional wellbeing factors.

In this phase, secondary data from local and public organisation were also collected. Secondary data from the NVUCF committee and related government organisations such as the NVUCF office, the NESDB (National Economic and Social Development Board) and the CDD (Community Development Department) were used for this study. Some of the data are available from the CDD's database. Databases from local government, sub-district administration office and from the fund's committee, were collected and employed as baseline information. Also, databases from local research are very useful for reconstructing baseline information and provided important in-depth qualitative information supporting facts and figures. These databases were cross-checked for validity and used for sampling procedure.

2) Multi-disciplinary fieldwork using MAPP

In the second phase, various impact evaluation techniques were applied to capture the impact of development intervention. Focus groups were formed and enquired for information entailed impact of the NVUCF and the saving group activities on their life as a member or clients, their family, and the community. The non-clients focus groups were also requested to present their changes in their livelihood in all levels during the intervention period and clarified the impact of the interventions. Research tools for this stage are as follows:

2.1) Life line analysis

This tool was used for the identification of minimum factors and evaluation of general conditions. The target groups will be asked to draw a curve showing how their community has developed during the intervention of the programme. The

amplitudes of the curve indicate the change of life. The scale has five levels, comprising evaluation units from “very negative” to “very positive”. The criterion that determines how many points are awarded determines the minimum factor, which is fixed at the beginning, but may be questioned and changed. The aim in each case is explicitly to refer to justify every amplitude anew. This strongly context- and process-oriented tool is suitable for the initial evaluation situation and is easy for the target groups to set up. The life line shows what factors are within the minimum range for the people in a period they themselves determine. This provides a first clue to the significance of the “external factors”, the community environment, and also an indication of whether or not they are within the project’s radius of action. The duration for this analysis takes approximately one and a half hours per group.

2.2) Social trend analysis

This method was employed in order to establish a matrix on social development. A detailed profile of the village is drawn and it will be shown how it has changed during the intervention. A five-level evaluation scale from “very negative to “very positive” is again prescribed for the group to evaluate. Any change according to the programme and the reasons will be discussed and recorded. This tool can produce a picture of the social development in the various villages and reflect the gross impact of the programme to be evaluated. The duration for this analysis takes approximately three hours per group.

2.3) Activity list

This five-level scale tool provides all programme activities and each activity will be rated the importance for the daily lives of the target groups. The client benefiting from the activity is identified. This snapshot tool will give an overview of the activities in the village and of the various groups of beneficiaries. Above all, this enables the programme being examined to the compared with other intervention programmes in terms of perceived importance and their spread throughout the importance of an operation for the daily lives of the target groups. The duration for this analysis takes approximately one and a half hours per group.

2.4) Influence matrix

This tool provides the net impacts attributed systematically with a matrix in which the strength of the influence of each activity on each criterion will be again rated on a scale of one to five. The most influenced social criterion and the most influential project activity will finally formed. This influence matrix will link the context view

with the programme view of the actual situation. The duration for this analysis takes approximately two hours per group.

2.5) Transect

This method inspects all visible programme measures in the village. The impression gained by the evaluation team is compared with the impression of the various measures previously conveyed by the target groups. The researcher will be in village, so this has ample opportunity to gain further insights into life in the community. A kind of journal will be kept of all observations, so that the notes taken during the appraisal phase may be compared with the target groups' statements.

3) In-depth and key informant interview

This research is dealing with people's lives and a complex social and community development. In-depth interviewing will be employed to embrace the participant's perspective on the programme impact. This qualitative method will unfold the participants views it or "the emic perspective" not as the researcher views it (Marshall and Rossman, 2006: 101). In the last phase of the primary data collection plan, in-depth interview will be employed to investigate more detail about the impact of the programme on the clients' livelihood, the benefit to household and finally the improvement of community and environment of the village. The questions for in-depth interview will gather the net impact of the NVUCF programme on their livelihood changes in various selected domains.

3.5.3 Preparatory stage before fieldwork

1) Research tools preparation

In April 2008, Questionnaires, tools for focus group discussions and workshops, tools for the MAPP methodology, interview questions for in-depth interview and stakeholders and other related tools were organised. With regards to the ethical issues, the consent form and information letter about this study which were given to all research participants before joining any research activities are prepared.

2) Making connections

Before this fieldwork, I had to make connections with all stakeholders involve with my research. First of all, I contacted to the NVUCF office in Bangkok for basic information. Afterwards I was assisted by one of my student, Miss Anyarat Siammai, collecting lists of clients and non-clients of the funds in the research site. She also made connections with the sub-district officers and local officials and arranged

accommodation during fieldwork operation. These connections and information helped in fieldwork preparation and research planning before entering the village.

3.6 Fieldwork experience

The actual research fieldwork began from the 1st of June to the 30th of October in 2008.

3.6.1 Entering the village

At first I went to the village in June, 2008 and stayed with Siammai's family, in Ban Saikaew village. The head of the host family is a janitor of Batupute School. The first week consisted of familiarisation and adaptation. First of all I introduced myself to the village headman ('Poo Yai Ban' in Thai) and explained him about my research details and what I was going to do during the five month fieldwork. Then, I visited people in the village and some key people including an activist who sets the saving group in the village, the committee of the NVUCF programme, and the district head. As I am a lecturer in a university and one of my students live in the village, this helped create trustfulness and a huge respect on me and this led to the overwhelming co-operation from villagers.

3.6.2 Familiarisation

In the first week of research fieldwork, the researcher has to build a friendly rapport with all stakeholders in the site. This will be simply build by making a relationship with the head of each village and then doing self presentation to villagers and research participants. In this case due to the researcher has been the site before and familiar with some people in the site, this can help reduce the time for this period and raise the trustiness from villagers.

3.6.3 Piloting and reliability examination

Prior to implementation, the questionnaire survey will be piloted with ten villagers in order to check the time for completion, the relevance and comprehensibility of both the questions to avoid misunderstanding and missing value. Then, reliability analysis will be tested using Cronbach's alpha which the most common form of internal consistency reliability coefficient. The criteria of accepted reliability conventionally require a cut-off of .80 for a "good scale" (Garson, 2008). However, a

lenient cut-off .60 is common in exploratory research and at least .70 or higher to retain an item in the questionnaire is an adequate scale.

3.6.4 Participation and outstanding rapport

According to Bryman (2009), it is important for the interviewer to achieve rapport or decent relationship with the respondent in order to encourage them to participate in and persist with the interview. For this study, participation in community activities was considered to be the essential element for raising the best understanding and strong relationship between the researcher and respondents. While doing fieldwork, the researcher got actively involved in all group meetings and community assembles such as village committee meetings, saving group meetings, and other meetings managed by local people and outside organisations. This helped me understand how they work and express their opinions and gave opportunities to break through social and cultural barriers and invited me to be friendly with villagers and to put them at ease.

Daily life activities from the traditional and cultural ones to small talks at a local coffee shop in the early morning are also taken into account and the researcher has attended these activities such as wedding party and funeral ceremony, Hari Raya festival (Celebration day of fasting), meeting for donation. To increase an excellent rapport, I also carried out all routine activities with local people. For example, going fishing and collecting sea animals, helping them carrying water to the house, and one month fasting in the Ramadan month. Participating in these activities helped raise a good rapport and relationship with local people so they were not anxious or felt stressed in the interview. This participation also gave another chance for me to mingle myself to the local society and offer time for local people to know and accept me into one of their group. Outstanding rapport, however, needs to be optimalised. Too much rapport or the mood or overwhelming friendliness may result in the respondent answering questions in a way that is designed to please the interviewer (Bryman, 2009). Thus, in the fieldwork participation played an important role for making excellent rapport while balancing act to the respondents and control the confidence level are borne in mind.

Last but not least I helped a local project, home-stay tourism which is one of Libong community projects, by teaching English for young students and groups of local adult especially housewives. With no doubt, this helped build a strong rapport and weave a strong relationship between the researcher and local people. After doing this, research participants were much more willing to tell stories and their experiences they had without hesitation. In short, participating in household and community activities and mingle myself to be a member of the village provide me the best outcome which was a rich and reliable data.

3.6.5 Village politics and other fieldwork obstacles

Before I went to the village or even I entered the village for the first two weeks, I had thought the community was harmonious and people there were very generous and kind to each other. I thought local politics did not exist in the village. I stayed there for a month and talked to many people in different classes and backgrounds. After one month observation, I found that village politics in the island was extremely high. As a result, I started to learn and plan how to correspond with all stakeholders without losing trustfulness from each group.

Based upon my observation and participation in community meetings, the village headman of Moo 4 and some SAO officers (In Thai = Au Baur Taur) had a longstanding disagreement and differences in opinions with an activist and a leader of the saving group. The collision has begun since the village headman of Moo 4 and some SAO officers were not satisfied that the saving group leading by Isma-Aen and Ramida, activists and group leaders who live in Moo 4, can gather people in the village, developed and implemented many beneficiary projects for the poor in four villages in the island. The village headman and some SAO officers always rejected all projects of the saving group in the meeting even the projects are very important for the village. As a result, there are two factions of villagers categorised by intimacy and benefit of each person. The first one is a group of people who are relatives and friends of the Moo 4 village headman together with some saving group clients who has disagreements with the group and never made a repayment for the loan. This conflict is a result of the misunderstanding between the saving group clients and the group leaders. Another group is a very strong assemblage of saving group clients and variety of occupational groups such as housewives, seafood products, local

fishery group, and grouper feeding group. Consequently, it is difficult for seeking the cooperation and collaboration between the two groups in order to conduct any local development projects.

3.7 Data analysis process

After completion the data collection process and getting adequate information, all data will be analysed with suitable methods. The analysis procedures will be separated into two parts, the quantitative and the qualitative analysis.

3.7.1 Quantitative analysis

After data gathering process, the data will be verified for the correctness and coded into a coding table. Then the data from the questionnaire survey and some data from the MAPP method will be analysed using the data analysis software (SPSS, Eviews, and Stata depends on the suitability of model analysis). The results will be cross-checked with the qualitative analysis results afterwards. The statistic employing for the analysis will be both descriptive and inferential statistics. To make an impact chains and correlation analysis model, the ordered probit regression analysis will be used to prove and examine the strength of the programme impact each variable.

3.7.2 Qualitative analysis

The raw data from in-depth and key informant interview and also some observational data from the MAPP method will be analysed. First of all, all data will be examined for the reliability and validity. Then, the researcher will transcribe and code the data as soon as possible to avoid losing information from the interview by using the qualitative data analysis software (NVivo). Categories and concepts of each domain of the programme impact will be constructed. Descriptive statistics will be employed including frequency, percentage, to describe the characteristics of the informants in each category. Comparison analysis will be adopted using a matched case-by-case comparisons by

1) Whole case or whole sample comparisons to facilitate cross-case comparisons which contain a combination of selected, representative quotations and researcher's summary.

2) Node or attribute analysis by compare columns such as comparing the impact of two or three groups which are different in occupation or income level.

More importantly, the results from qualitative analysis will be triangulated with the econometric analysis and other quantitative analysis results. This will increase the credibility level of the results and strengthen the impact chain analysis.

3.7.3 Triangulation strategy

It is frequently suggested that it is important to use more than one method or source of data in order to make a better understanding of social phenomena using mixed methods or triangulation. According to Denzin (1970), he explains triangulation as an approach involved with 'multiple observers, theoretical perspectives, sources of data, and methodologies', but the emphasis has tended to be on methods of investigation and source of data. For this study, to achieve the goal in better understanding of poverty and wellbeing impacts of microfinance intervention, patterns and mechanisms in the rural community can be reached by triangulating data from variety of quantitative and qualitative methods. Ultimately, plausible and credible impact assessment will be captured.

3.8 Ethical and general issues

There are some considerations which have to be clarified before and during doing this study.

3.8.1 Ethical issues

By using both primary and secondary data for this research, there are some concerns about ethical issues as followed:

1) Informed consent

Selected interviewees, informants, and research participants will be given sufficient information about this study and the implications of their participation before being recruited, to enable them to make a decision whether or not to participate in the interview. The information of the study will be presented verbally to informants by the researcher. The information given to the informants including

- The identity of the researcher: inform about the name and contact details of the researcher will be made available to allow participants to obtain more information about the study if required.

- The purpose of the research: the objectives of the research are presented to informants in a simple way.

- Reasons why the participant has been selected: the informants are given the reasons or methods for the selection of participants.

- Future use of information: the researcher presented any potential future use or processing of data collected in the study to informants.

- Time to reflect: each informant is given sufficient time to reflect, before and after making a decision to join the interview.

2) Harm to interviewees

The researcher will avoid asking any question that will be harm informants' feeling but just let them say what they want to say (Pandit, 1996). The important issue is to minimise questions that might cause informants undue embarrassment and give the utmost respect for all people related in the informant's conversation (Muchmore, 2002). More importantly, informants have right not to participate and withdraw. They will be informed about their right to decline participation or withdraw at any stage of the research with no consequences to their future care or treatment.

3) Anonymity and confidentiality

The information of each client, household, and all key informants will be kept in secret and anonymity and not allow for others to access this information without permission. All data and tools are not to be released to any person(s) for any reason without the express written permission from the research participants.

4) Data permission and citation

Before using database from all secondary sources (The CDD and NESDB database, the NVUCF board of each village) the researcher has followed the research protocol for using database and all research tools. To request for data and research tools such as raw data, communities profile, clients' personal information and participation activities, the researcher has to ask for permission to use all database from the gatekeeper and follow the regulation of data and research tool use. All publications and presentations shall acknowledge the contributions of data source provider and the researcher will cite the source of all information in any use of the data and tools.

5) Data analysis

In the process of data analysis, to avoid any kind of mistakes, the researcher will justify the appropriateness of statistics and research methods for data analysis.

Statistical planning is a strategy to prevent unsuitability of using statistics or methods for this research.

6) Interpretation process

The important issue involves using secondary data is about interpretation process. The researcher realises that before analysing and interpreting the data, it is important to understand how the data is produced, measured, and the meaning of variables. During the interpretation process, the researcher will interpret the data without prejudice.

3.8.2 General issues

Other concerns relating to the research above and beyond the ethical issues are:

1) Logistics

To handle this research, there are some concerns to prepare before going to fieldwork. First of all, doing research in June when it is in a rainy season might face some difficulties in terms of transportation to the island. As a result, the researcher will stay in the village with one family there. This can give an advantageous opportunity for doing observation in details.

2) Validity of information

With regard to in-depth and key informant interview, the research will be cautious about communication and interpretation. The language and cultural issues seem not to be problematic since the researcher can speak the same dialect and familiar with the socio-cultural background of the village before the fieldwork. Another consideration is about the validity of secondary data. It is needed to check all data before analysing data.

3.9 Conclusion

This chapter provides an overview of this research and a methodological approach and a process of the research fieldwork. Theoretical frameworks related to previous literature from the previous two chapters are formed the research conceptual framework and research tools. A mixture of various research methodologies is adopted aiming to investigate the genuine impact of the programme with concerning to some ethical and general issues with can affect the research operation. In the next chapter, general information and some empirical data about the funds and further information about the research site, Libong Island is revealed.

Chapter 4
Libong Household Survey and Exploration

4.1 Introduction

In the previous section of this thesis, the theoretical background and related literature have been explored, followed by a clarification of the methodological stance of this study. In order to link to a discussion of the empirical findings, this chapter provides details of the research site, (Libong island communities) from general characteristics to specific issues. The chapter contains three main elements. Firstly, the introduction of general background including geographical, historical and demographic details and the livelihoods in the community followed by an outline of household and community issues. Secondly, an overview of the community groups, village politics, the relationship between groups, and the intervention of different types of microfinance will be illustrated. This illuminating background of the community will enable a greater understanding of social dynamics in the communities. The final part of this chapter introduces the household survey data set for this study. The data includes quantitative surveys and qualitative data which are used in each of the empirical chapters. Descriptive statistics of the main variables used are then presented.

4.2 Libong Island: general characteristics

4.2.1 Geographical details

Koh[8] Libong or Libong Island, the largest island of Trang province (See figure 4.1) sea area, covers the land area at approximately 45.27 square kilometres and currently has 6,767 inhabitants.[9] Throughout much of its history, Libong has been considered a crucial location in historical and environmental study according to its unique culture, a longstanding history which can be traced back to the King Narai (1656-1688), and its richness diversity of both plant and animal life[10].

[8] Koh in Thai language has an equivalent meaning to an island.

[9] From the latest census in March, 2008 by Koh Libong sub-district administration organisation.

[10] Its richness of seagrasses made Libong island to be the only place in Thailand where dugongs or seacows (D. dugon) can be found. Currently, it is estimated that there are no more than 70 dugongs alive (Thai society for the conservation of wild animals, 2009).

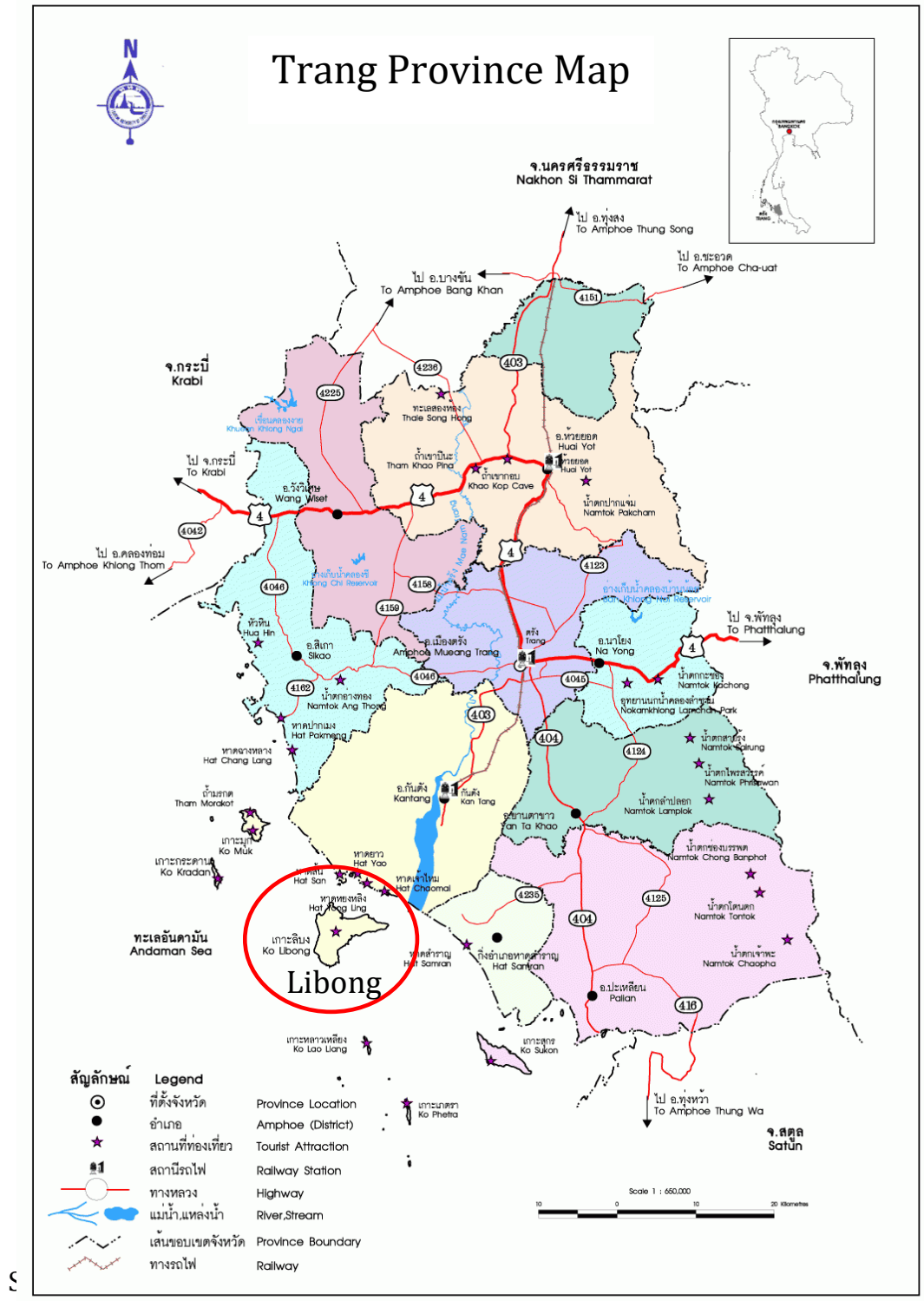


Figure 4.1 Trang province and Libong Island Map

Geographically, the island consists of plain areas by the coast and approximately 40 percent of mountainous area in the middle of the island. High cliffs and three percent of beaches are in the west. In the east coast is a large plain area but half of it is a muddy area with a lot of seawood and mangroves. The heart of the island is full

of rubber tree plantations which are nowadays the main source of income for villagers.

The island boundary can be divided into four villages:

1) Ban Koksatawn or Ban Prao, Village No. 1 (M.1)[11];

2) Ban Batupute, Village No. 4 (M.4);

3) Ban Langkhao, Village No 5 (M.5); and

4) Ban Saikaew, Village No. 7 (M.7).

The island, however, is included in the administration of Koh Libong sub-district and is combined with other villages, three on the mainland and one on Muk Island.

Table 4.1 Villages in Koh Libong sub-district administration

Moo	Village's Name	Location	Area (km^2)	Number of houses
1	Ban Koksaton	Libong island	7.12	186
2	Ban Koh Muk	Muk island	10.62	469
3	Ban Modtanoi	Mainland	1.92	291
4	Ban Batupute	Libong island	3.20	207
5	Ban Langkhao	Libong island	5.22	165
6	Ban Chaomai	Mainland	12.80	180
7	Ban Saikaew	Libong island	2.16	215
8	Ban Su-Ngai Batu	Mainland	2.24	85
Total			45.28	1,798

Source: Koh Libong sub-district administration organisation office, 2008.

4.2.2 Climate

Libong Island has two seasons:

1) Hot season runs from February to May and reaches the highest temperature period in March and April.

2) Rainy season begins runs mid May to October. During this period the island faces the southwest monsoon. It rains heavily from August to October due to the influence of the northeast monsoon as the temperature gets colder. Another climate condition which influences the livelihood of people on the island is seasonal winds and storms. There are a number of seasonal winds on the island as shown in the following table.

[11] M. stands for 'Moo' means village.

Table 4.2 Winds and storms

Month(s)	Wind/Storm	Detail
Nov. – Feb.	Tahra (Rang)	A strong wind and makes difficulty in fishing. However, this wind comes with the sea stream which brings more sea fishes.
Apr. – May.	Hua-non	An occasional strong wind with stream
Feb. – Apr.	Salatan	An occasional strong wind
	East wind	An occasional wind
Apr. – May.	Timortali (South wind)	A strong wind which stirs the sea and make difficulty for fishing.
Sep.	Padya	An occasional sea breeze
Oct.	Hwapad (Ladlod)	A seasonal storm from the southeast
Oct. – Nov.	Hwadload	An occasional wind which creates big and strong waves
	Pad	An occasional blustery weather

Source: Adapted from Rattasomboon, 2007 and from present study's group discussion.

This local knowledge of seasonal winds and storms is essential for villagers, especially fishermen in reducing the costs of shipping, since they can make a fishing plan before hand and help reduce fuel costs. This knowledge of winds and storms is also very important for changing transport routes to the mainland and other islands.

Another environmental phenomenon which affects the way of life and activities of people is the ocean tide. Surprisingly, everyone on the island even children knows when the tide is high or low. The tide changes twice a day and normally the tide is stable shows little fluctuation but sometimes there are substantial changes in tide level. Using lunar calendar, local people can precisely forecast the tide changes and plan for their fishery business.

4.2.3 Historical background and island development

Historians acknowledge Libong Island as one of the important islands in southern Thai history. According to documents from Ayudhaya[12] historical documents, this island is well-known for the richness of natural resources including black-nest and white-nest swiftlets, sea animals, especially leeches and wing shells, and mangroves. In the first period of settlement on this island from 1661 to 1767, people migrated from the mainland and neighbouring islands and dwelt on the north shore of the

[12] Ayudhya is the old capital of Thailand at the age of 417 years. It is the longest aged of Thai capital. Nowadays it is a province located in central Thailand adjacent Loburi, Angthong and Saraburi at the north, Pathumthani and Nonthaburi at the south, Sarhaburi at the east and Suphanburi at the west of Thailand.

island, which nowadays is the location of Moo 1 Ban Koksaton (See figure 4.2). At the beginning, the island was under the administration of Malaya but controlled by the Thai government. After destruction by Burmese soldiers in 1764, the village separated into small communities.

In the second period during 1767 and 1819, the community developed from a small village and the island was combined with other towns under control of Trang province in 1787. This island expanded its importance of international trade with Malaysia and other nearby islands. Libong community started to flourish with sustained economic progress. The main income of people was from bird's nests and leeches, which were mainly exported to China. Between 1807 and 1811, Libong was an important port for trading with Kedah, Malaysia, but there was still a war with Burma. The island was the centre for Trang province administration between 1811 and 1822. This was to free Libong for international trade especially elephants and tin exported to India. This was the most prosperous time for Libong. As a result of the war, in 1819 Libong port had changed from trading to military based purpose. The population of the island gradually declined and finally the island became deserted.

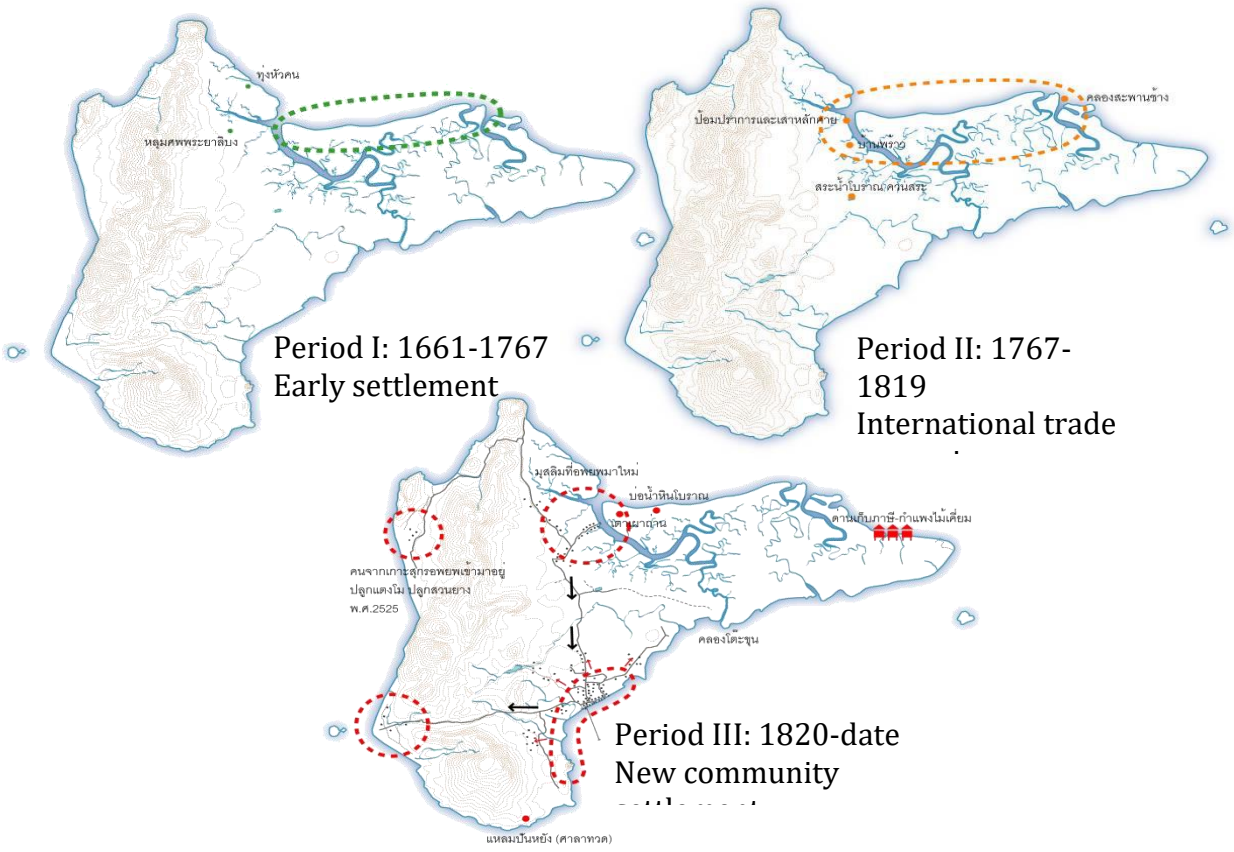


Figure 4.2 Development of community settlement on Libong Island

In the third period which dates back to 1820, the Libong community was rebuilt during the era of King Rama V (King Chulalongkorn). In this period, Praya Rassadanupradit- Mahisornpakdi, the governor of Trang province developed the city in many ways including by bringing rubber trees into Thailand and planting them for the first time in the country in Kantang, Trang. Rubber trees were then brought into the island and the rubber plantation area was expanded into the centre of the island. A customs office was established at Juhoi peninsular in the northwest part of the island. The importance of Libong port was reduced due to the establishment of Kantang port on the mainland. As a result, the island was isolated from the mainland.

At the beginning of the new settlement, the population on the island was a combination of two groups. One was a group of local fishermen[13] . This group live to the south of Kian river to Batupute mountain. The other group were Muslim migrants living in the north of Ban Koksaton (Moo 1) in the north of the island. Most of them farmed and caught fish for a living. The community were expanded and there was a movement from the north of the island to the southeast coast which is Ban Batupute (Moo 4) and Ban Saikaew (Moo 7) nowadays. This area is the most crowded area of the island. Some people moved to across mountains in the middle of the island and settled on the southwest coast of the island which is Ban Langkhao (Moo 5) at present. The last part of the island which was originally settled by local people and some migrants from Sukorn island (Pig island), was in the northwestern part of the island called Tung-Yaka. In 1982, some migrants from Sukorn island moved in and most of them planted watermelon and rubber trees for a living. The lack of proper roads and the designation announcement of a national park area are the main reasons for some villagers moving out of this area. However, some migrants continue to live there in rubber and watermelon plantations.

[13] Fishermen in Libong island is categorised in a group called 'U-luklawoi' which was found living in Langkawi, Malaysia, Lanta and Phi Phi Don island of Krabi province, and Adang island of Satun province. U-luklawoi is one of the main ethnic fisherman groups in Thailand which is different from the other two groups, Moglen in Phuket and Takuapa, and Morgan in the south of Burma and Surin archipelagos.

4.3 Households and communities in Libong

4.3.1 Household characteristics

According to the recent survey in 2009, the distribution of population by gender in each village is shown in table 4.3. It is clear that there are more men than women in each village except in village 7 Ban Saikaew. In searching for higher education and looking for a good job and better life, some local women have moved to the mainland to study and work. Men, prefer to work on the island as rubber tappers and fishermen.

Table 4.3 Population in Libong sub-district and of Libong island by residence and gender

Moo	Village's name	Population in Libong sub-district		
		Male	Female	Total
1	Ban Koksaton	419	371	790
2	Ban Koh Muk	875	828	1,703
3	Ban Modtanoi	517	479	996
4	Ban Batupute	423	406	829
5	Ban Langkhao	290	273	563
6	Ban Chaomai	312	272	584
7	Ban Saikaew	477	499	976
8	Ban Sungai Batu	211	201	412
Total		**3,524**	**3,329**	**6,853**

Source: Three year development plan 2009-2011. Libong sub-district administration organisation.

The household size on the average is five to seven per household in an extended family. Living in the same house of at least two families affects the social and economic wellbeing of the members of the household. Also, this large household size can lead to health conditions. The housing on average is of quite poor quality and overcrowded. Most of the houses do not have enough bedrooms for family members and some houses have only one big hall which is used for the whole activity of the members.

4.3.2 Level of Education of household population

According to this survey, people in the villages mostly attended primary education. Males has more chances for attending school at the higher level because of the culture and local norm of sending boys to higher schools especially religious schools both domestically and abroad (in the Middle East or Egypt). For the current and

younger generations, parents tend to send their children to local primary schools and continue sending them to high school on the mainland or religious schools. The gender gap in education levels in the area has been eroded and there is a very small to zero gap in terms of gender equality in access to the educational system.

4.3.3 Income sources

The main sources of income of local people are mainly from one of three occupations. In the past twenty years, the fishery sector is has declined from the most important source of income for the island. Because of the decrease in number of fish caught each year and the rise in the cost of production especially oil and fishing equipment. Most of fishermen have moved to the city centre on the mainland and Bangkok to find a job. At present, rubber plantations are the main source of income for Libong people. Some have their own rubber plantation and make their own rubber sheet or hire others to do it for them. Some villagers sell the liquid product from the rubber trees. This main income source helps the economy since the price of the rubber sheet is high enough for local people to be able to raise their family. Another important source of income is food related products such as food stalls and food vendors, coffee shops, and groceries. Local consumption behaviour is having tea and coffee outside for early breakfast and late coffee at night, the food and coffee shops are the main part of local economy. Especially during the month of Ramadan[14], people tend to spend more on food than normal. The last but important source of income is transportation services, taxi and motorcycle taxi. The transportation services bring money from tourists and some from local people who need to travel to the mainland or domestically on the island.

4.3.4 Infrastructures of the community

1) Road and transportation

The village roads ar predominantly made of soil. Only two sections of the road are made of concrete, located in Ban Saikaew 300 metres and Ban Langkhao 300 metres. At the time of this study, there is a project of two- kilometre long road, linked between Ban Prao and Ban Batupute, which is the main road in this island. During

[14] Ramadan or Ramazan, Ramzan, Ramadhan, Ramdan, Ramadaan, is the Islamic month of fasting in order to participating Muslims refrain from eating, drinking, smoking, and indulging in anything that is in excess or ill-natured; from dawn until sunset.

the dry weather, dust fills the roads. During the rainy season, some roads are flooded, particularly those between Ban Koksatawn and Ban Batupute. Some roads are destroyed by heavy rain. As a result, most of the roads are unusable during the rainy season, causing transportation problems to schools, pier, and between villages. After the rainy season, potholes appear on roads especially hilly roads, also causing difficulty with access. The road in the west is narrow and dangerous. It is by the cliff and some parts of it are hilly and in a bad condition. This causes some accidents to commuters and students cannot use this road to schools on rainy days. The main transportation between villages is by walking. Since 1957, there was the first time people travelled by motorcycle and from 1982 there was a motorcycle taxi service from Ban Koksaton to other villages. Travelling to the mainland, people used to commute by small long-tail boats.

2) Electricity

This island was supplied with electricity from 1994. At present, all households enjoy the use of electricity. However, there is only a limited supply of electricity each day, from 8 am. to 1 pm. and between 5 pm. and midnight. Some households, particularly those in remote areas, do not have a direct connection to the electricity supply but have to connect their own wiring to solar cell power equipment provided by the government.

3) Water Supply Irrigation

People in the villages use water from wells spread around the village for daily use and consumption. There is no organised water and irrigation system. In some area people can get water from a concrete pond in the middle of the island. In summer people are still suffer from drought and lack of water supply.

4) School

The first school on this island was established in 1939. Now three schools on the island. Koh Libong School in Moo 1 and Langkhao School in Moo 5 provide elementary education from pre-school to grade 6. Batupute School in Moo 4 provides education from kindergarten to grade 9. This school expanded educational opportunity for children by opening secondary level with grade 10 in 2008 and complete provision to grade 12 in 2010. Additional education for children in villages is Islamic classes provided by local Islamic teachers and local scholars in the only one religious school of Libong community. This school provides Islamic education to children between 5 to 15 years old. Classes are held after 7 p.m. on weekdays in

term time and in the morning in summer time with extra classes on Sundays. After graduation from the primary school, some children further their studies at private Islamic schools located in the nearby provinces. Some are sent to secondary schools in the district town of Kantang and Muang District or nearby provinces. Some ambitious parents choose famous religious schools in the south of Thailand or send their children to study abroad in Malaysia or Egypt.

5) Public Health Care Service

There is no hospital in the island. Only one healthcare service centre is provided. Unfortunately, there is no doctor or nurse but only a medical officer. People can acquire healthcare service on the mainland which takes them nearly an hour to reach the nearest hospital. However, that hospital sends a doctor to the island to give healthcare service once a month.

6) Religious Places of Worship

Residents of Libong Island consist of 99 percent of Muslim and one percent of Buddhist, thus only Islamic places of worship are found in the village. There is one major mosque in Ban Batupute and two small ones in Ban Langkhao and Ban Saikaew. Men in the villages always congregate and pray in the major mosque at midday of Fridays. Women, have a religious lecture on Monday afternoons at houses in the villages.

7) Market/Shops

There is no market on this island. Only small convenience shops can be found and some vendors selling their products to villagers using motorcycles or walking from door to door.

8) Telephone

There is no home telephone provision on the island but there is a good mobile network. Thus, people in the island use mobile phones for communication.

4.3.5 Exogenous factors and Libong community

It is important to understand and be aware of other factors which have influences on people's wellbeing. There are three main external factors related to the livelihood and social dynamics of villagers.

1) Tsunami and a psychological effect

Natural disasters influence the livelihood of people especially those who depend on the weather for their livelihood. In Libong island, normally seasonal storms can lead

to difficulties of both fishing and rubber tapping. Unable to do their job during this period causes an income shock and hinders household consumption. Local people adapt themselves and change their behaviour in consumption and working in order to minimise this seasonal barrier. However, the arrival of tsunami in 2004, even it was not as dangerous as in other areas in Thailand, struck and damaged both the material and mental wellbeing of villagers. This event had a big impact on both the objective and subjective wellbeing of local people.

The direct impact of this disaster increased the level of negative affects including fear, nervous stress which makes those, especially those who work in fishing, unable or afraid of going to sea and working again. Resilience and adaptation to this situation took them quite a long time.

Some villagers who coped with this disaster really well still faced another bigger problems. Fewer fish and other marine creatures after the tsunami led to ecological changes such as streams and tidal movement. This caused the reduction of amount of fish caught. The result was shortage of income for their families. This environmental and economic impact was partially lessened with the help of the microfinance and fund projects. The loans from both VF and SGF helped reduce the financial difficulty during that period. Also, villagers who lost their equipment used the loans for buying new tools for their work. Some used it for their children's tuition fees and lessened the impact on household consumption.

2) A high-oil price era and livelihood

Another factor which is powerful as a cause of changes in livelihood is the fluctuation of the oil price. Due to the geography of the community, the only way to connect to the outside world is by marine travel. The only way to commute from the island to the mainland or the nearest city is by passenger boats with approximately 8-12 persons per time. The present study, from the observatory results, found a link between a rise in the oil price and the changes in Libong livelihood.

The economic impact of the high-oil price during this period can be seen from an increase in transportation costs. Previously, the cost for commuting to the mainland was very cheap and affordable. The high-oil price pushed the cost of living for people in Libong community. Thus, the loans from the VF and SGF mitigated the extent of this problem.

3) National politics and the hidden local polarisation

From 2001, the government of Thaksin Shinawatra triggered conflicts between interested groups in Libong community. Usually, people in the communities are very harmonious and help each other as can be seen from important events such as weddings, funeral ceremonies or Hariraya events in villages. However, by staying in the village for longer and observing carefully, it was found that actually the community was divided into many groups. Most people in the South of Thailand normally support the democrat party; however, there are some groups of people who benefited from Thaksin government which seemed to be against the democrat party. The VF and the corruption of the VFCs in Libong community led to the failure of the fund in Ban Langkhao (M.5). The link between national politics and village politics together with the unfairness of fund allocation were the main causes of the polarisation in the community. This factor is very important and crucial for impact analysis together with other factors which have to be borne in mind in carrying out project evaluation.

4.4 Village politics and beneficiary groups

As was highlighted in the last chapter, it was found that there was some evidence of conflicts amongst groups of people in Libong communities. The conflicts arose gradually along with changes to social structure and culture changes and community development. There are two major disagreements that exist in Libong today. According to this studies observations and interviews, the economic changes between people and groups is a significant cause of the conflict. On one hand, some quarrels derived from the failure of funds on the other the granting of funds created conflict. To understand these conflicts and the political situation in villages, it is worthwhile to identify beneficiary groups and main characters in the community.

4.4.1 Beneficiary groups and their roles in Libong community

It is not easy to identify groups in the village since people in the community are considerably harmonious in everyday life. This group categorisation is derived from this research by participant observation and in-depth interviews.

1) Fishery group

The first important beneficiary group in Libong community was a group of fishermen. These groups originated from the idea that fishermen in the village form

the groups aimed at helping each other in terms of saving and offering loans for fishery purposes to their members. Some groups provide emergency loans for other purposes for members. It was found that, according to participant observations, group organisation is informal and most of the groups have not succeeded in maintaining the groups as a result of the failure and delay to loan payments. Some fishery groups are informally and friendly formed in order to consult and help each other in fish catching and bargaining the price to the fish dealers. The last type of group is a fishery group formed by some fishermen and housewives who join the savings group and do conventional fishing accompanied by group aquaculture. As this group's activities provide more than one source of income, this increases the strength of the group and stabilises members' income.

2) *Pae*

'*Pae*'[15] in Thai this literally means a raft used for water travelling. In the community terminology, however, it refers to a fish dealer in the village who collects seafood products and sells to the mainland. There are 10 fish dealers in four villages on the island. This beneficiary group plays an important role in the community in terms of local finance and economy. With their superior economic status, *Pae*s support fishermen by giving some loans for buying fishery tackle such as boats, engines, and fishing nets and traps on one hand, performing as a mediator between fishermen and consumers on the other. All of them are superior in status than other villagers either economically or politically. Some of them are leaders or powerful people in the village.

3) Local entrepreneur

As important as the *Pae* group are local entrepreneurs including grocery, convenience stores and food shops that are significant for the village economy. This group provides commodities, which are mostly imported from outside the island, for villagers. As they informally formed this connection, they have enough power to set the commodity prices. Only two groups are formed formally, one is the dessert group and the other is the convenience store group. However, a relationship between members in the groups is not strong due to the need of excess profit. Some members only join the group when they think they need help from the group or when other members of the group are performing better.

[15] Pronounced as peə in pea[r].

4) Savings group members

This beneficiary group is originated from the foundation of Mr. Isma-aen Bensa-ard, the leader and the founder of this group. At present there are 250 members in this group with the majority being females or fishermen. Initially, this group helps its members by providing loans for its clients in six purpose categories including buying a new boat or repairing the existing one, fishing tackle, cattle, group aquaculture and handicraft (Isma-aen, 2008). Many loans were distributed to members without interest due to their religious belief. Just a small service fee is charged. With respect to the relationship of members in this group, it is found that there is a strong and harmonious relationship among the members including the relationship between members and to group committee. Nevertheless, there is evidence of a minority of members who oppose the group committee. Besides loans, this group also provides friendly and economical daily products for villagers in the form of a cooperative store. This helps local people to consume cheaper goods during economic crisis and when they are shortage of income. This benefits the community in three main ways. Firstly, it is used for supporting inferior groups in the community including those students who are orphans or lack the funding to go to school, the elderly and disabled, and those with chronic diseases. Secondly part of this profit is used to rejuvenate and conserve shorelines and seawood areas around the island. The last portion of the profit is divided and given back for members.

5) The NVUCF members

As a result of Thai government development intervention, the village fund programme, a group was formed in each village. The committee is assigned by villagers who are members of the group. Members of this group are volunteers; however, not every member can get a loan from this fund in the first round, due to the size of the fund. The relationship between individual members and between the members and the committee of the group was not strong compared to other groups. This can be seen from the low level of cooperation and participation in group activities. This weak bond leads to vague objectives, rules and management systems which affect the sustainability of the fund. The leader and committee of this group are mostly key people in the village. Some of them are local politicians and some are local fish dealers or well-known people in the community.

6) Community leaders and DAs

Another important group which influences community development is a group of local politicians. The first is a group of village leaders including the district head, the village head, assistants and village committee. A second group is a group of district administrators (DAs), involved in the village administration. Both groups of people are elected from villagers. The same applies to the NVUCF leaders and committee, this group of people are normally members of other groups. This sometimes affects how they make decisions and manage local projects.

4.4.2 Conflict and village politics

During fieldwork observation and in-depth interviews with villagers and key members of the community, there was some evidence showing those beneficiary groups as mentioned above have conflicts between each group in one or many ways. The disagreement between groups can be shown below.

1) Conflicts and tensions among leaders

It was found that there has been a longstanding conflict between the leader of the NVUCF programme and the leader of the savings fund group according to individual interviews and focus group discussions. This has happened because of disagreement over the issue of village development and transparency of administration. The leader of the savings group is obviously known and accepted by local villagers; NGOs and local organisations in his dedication to the development of the community. He together with the savings group provide opportunities for villagers to participate in group activities and get involved in all planning and decision-making processes. In contrast, the leaders of the village including the village headmen and his committee and the head of the village fund have not been accepted by local people in terms of administrative transparency and the dearth of participation from villagers and stakeholders. This conflict among groups and local leaders can clearly be seen from the meetings. They always disagreed with each other. Even worse than that some of them attempted to obstruct any projects from the opposition in order to response the disagreements and exclude ones who did not agree with their idea or ones can cause them difficulties. These consequences severely affected the community development. Some projects were abandoned even though it was of benefit to local people.

2) Local entrepreneurs-and the savings group tensions

In the past, local entrepreneurs especially retailers or convenient shop owners are the main factor in trading for local markets. This group of people provides from essential goods such as rice, vegetables and meat to luxury goods like fashion clothes or furniture. Even though they set the price higher than it should be, customers still have to buy from them due to the lack of competition and the inconvenience of commuting to the city centre. The price dominating power of this group was lessened once the savings group arrived. One of the savings group activities was to establish a convenience store and sell goods at a lower price than other local shops. This undoubtedly created dissatisfaction with local shops owners due to the loss of profit from their businesses. The disgruntled entrepreneurs finally supported the opposition to the savings group leader and there were some attempts to disband the group. Fortunately, the excellent cooperation of the group members and some villagers who is benefited from the savings group store helped supporters of the group through this difficult situation.

3) Fund committee-members tensions

This tension arose from the clash between the fund committee and its members during the repayment period. If fund members could not repay their loans on time either because of production related or personal problems, the committee had to warn or discuss with each member the repayment time. The conflict was more intense when the members, even though they had sufficient money to pay back the loan, deliberately refused to pay back claiming some fund committee has not paid back their loans. This conflict led firstly to others imitating this behaviour and then to a negative effect on the cooperation between members for fund programme activities.

4) *Pae*-fishermen tensions

In the past the relationship between *Pae* and fishermen was mutually dependent. Fishermen needed a mediator to connect them to the fish markets and customers while *Pae* got reasonable benefits from marginal profits of fish trading. This mutually beneficial business was run on a friendly and kinship basis. Nowadays, the traditional relationship has changed to a creditor-debtor affiliation and the connections are more complex. Each *Pae* provides loans for fishermen to buy fishery tackle after receiving the loan, each fisherman becomes a debtor and has to pay back the loan to *Pae*, the creditor. Not only has he the repayment commitment, each

fisherman attached himself to *Pae* with the unwritten contract of sending all fish and seafood to the *Pae* giving him the loan. The amount of the loan is gradually reduced by deducting from the fish value. However, it takes many years to be free from this debt. This is explained by the low fish price set by *Pae*s. Also, *Pae*s are pleased and encourage their debtor to get further loans which leads to fishermen in the vicious grip of chronic or lifetime indebtedness. The first conflict arose from the absolute power in the fish price setting of *Pae*s. This pushed some fishermen to break the agreement and sell their fish to one who gave the maximum price. As a result, it created arguments and distrust between *Pae*s and dishonest fishermen. Another tension occurs when a fisherman accepted a full debt repayment from another *Pae* and changed his *Pae*. In this case, it unquestionably built competition between *Pae*s to maintain and have more debtors in their control which led to incongruity among them.

4.4.3 Beneficiary groups and their relationship

After understanding main beneficiary groups and the interplay between them, it is now easier to depict the multi-group relationship in the community. The Roles and connection between the groups are shown in figure 4.3.

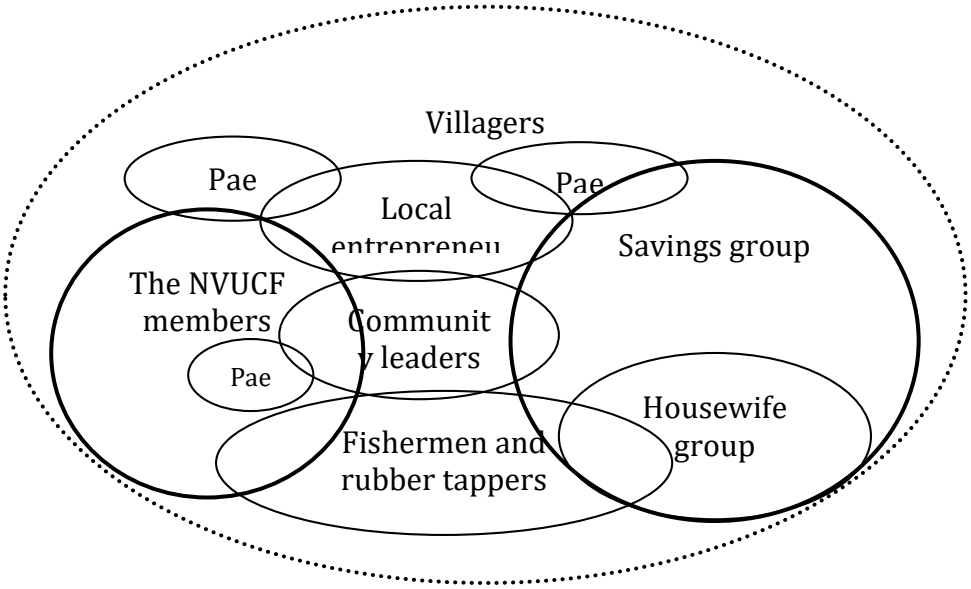


Figure 4.3 Venn diagram of group relationship in Libong community

Source: own observation, 2008.

It is obvious from figure 4.3 that there are overlapping roles of some members and some interesting relationship when two funds are taken into account. The housewife

group obviously attaches to the savings group and plays an important role in the group. The community leaders, according the survey and observation, prefer to join and support the village fund programme more than the savings group. This polarisation is more apparent in the community or local network meetings as they are always against the savings group activities. Since some of them are in a Pae group and are local entrepreneurs, the conflict between them and the savings group happened more and more often. The tensions multiply from general and personal benefit to specific and idea disagreement.

4.5 The intervention of microfinance schemes in Libong

This section describes how all loan and aid projects were introduced in the community. There are four main microfinance schemes which appeared in the Libong community:

4.5.1 The BAAC loans

The Bank of Agriculture and Agricultural Cooperation or i BAAC is a commercial bank facilitating agricultural credit originally for farmers. The development of the bank services expanded the loan channels for various types of agriculture and for new agricultural business. The main agricultural loans are for new rubber tree and palm plantation. However, the difficulties in financial service management due to geographical and distance considerations and the rigid rules of borrowing and repayment systems, means most farmers seek other more accessible sources of loans.

4.5.2 The savings group

The savings group of Libong was established in 1990 with the cooperation of local people. In 1988 there was an attempt to form a group called 'Klum Om Sab' which means 'Savings Group' in Ban Batupute. Klum Om Sab had three main objectives, which were to encourage local people to save, to provide loans for members, and to create unity and cooperation within the group and community.

In 1990 this group started formed a new group of fishermen who realised the problems of marine destruction from their own and local people's fishing activities. The savings fund of this group helped manage and prevent environmental damage

around the island and some areas nearby. This included coral reef, seagrasses and mangrove area protection, as well as this this group aimed to support villagers in the Libong community to improve their quality of life. From 1997 this included loans for buying inputs or investing in new businesses, setting up a vocational group, encouraging people to save and offering welfare funding for vulnerable people such as children, elderly, and the disabled.

In 2004, the Libong savings group set up a housewife group and followed this by the creation of five vocational groups creating more local jobs and providing an alternative path for generating household income. Those groups are working in the area of seafood production, organic fertiliser, aquaculture, clothing and goat husbandry. A success of the group led to new vocational groups and now there are ten groups operated by members (see table 4.4).

Table 4.4 Vocational subgroups in the Libong Island Fisher Folk Savings Group Network (LFSGN)

No.	Group (Glum)	Product/service
1.	Organic fertiliser	Organic fertiliser from fish and fruit
2.	Fishery	Sea fish, prawns, crabs, mussels, squids, leeches
3.	Grouper aquaculture	Grouper fish
4.	Goat husbandry	Goats, milk
5.	Seafood products	Salty dried fish, fish paste and dried seafood products
6.	Organic agriculture	Organic vegetables
7.	Women/ housewife	Clothes, home-stay tourism
8.	Handicraft	Handicraft from fish scales and shells
9.	Dessert	Dessert and sweets
10.	Batik	Clothes, table cloths, handicrafts

Source: own observation, 2008 and 2009.

The present survey of this study found that this group provided loans for multi-purposes together with a savings system called 'Bia Satcha' or monthly promissory savings. This can stimulate and change the saving habits of some members encouraging them to save regularly. According to the 120 household survey of the Libong savings group, the loans were used for different purposes as shown in table 4.5.

Table 4.5 Loan use by gender

Gender	Loan use				Total
	Star a new business	Buy inputs	Housing	School fee	
Female	7 (16.7%)	31 (73.8%)	3 (7.1%)	1 (2.4%)	42 (100%)
Male	6 (7.7%)	70 (89.7%)	2 (2.6%)	0 (0%)	78 (100%)
Total	13 (10.8%)	101 (84.2%)	5 (4.2%)	1 (0.8%)	120 (120%)

Source: own calculation.

Table 4.5 shows the first priority of loan utilization of the SGF's members by gender. It was found that the loans were used for the purpose of buying inputs for their activities. The main important inputs include boats, fishing equipment, or tools for rubber tapping and plantation work.

4.5.3 The village fund

The Thailand Village Revolving Fund became operational very rapidly. Inaugurated in 2001, Village Fund Committees (VCFs) had been formed in 92% of the villages and urban communities in Thailand, and much of the money had been disbursed. By May 2005, 99.1% of all villages had a Village Fund in operation and 77.5 billion baht, representing 98.3% of the originally scheduled amount, had been distributed to Village Fund Committees (Arevart, 2005). The village funds are locally run by the VFCs, and have some discretion in setting interest rates and the term of loans; however, the initial working capital came from the central government which set the maximum loan amount. The process of this fund is a revolving system which is shown in figure 4.4.

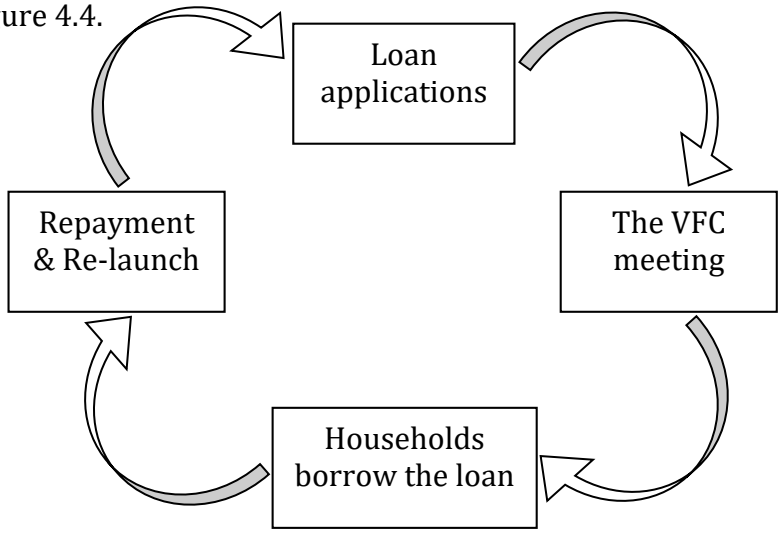


Figure 4.4 Loan revolving process

The loan revolving process begins with fund members submitting a loan application to the VFC and then the VFC continue the process by making a decision in the meeting to allocate the fund. Households then borrow and repay with interest and the money is lent out again. The VFC indirectly handle money through a variety of intermediaries, of which the most important are the Government Savings Bank (GSB), in the case of urban areas, and the Bank for Agriculture and Agricultural Cooperatives (BAAC), in the case of rural areas and semi-urban communities.

There are five operational steps must be taken:

1) The village first sets up a local committee (The VCF) to run the fund and to determine the lending criteria including interest rate, loan duration, maximum loan size, and objectives.

2) The properly-established committee then opens an account at the BAAC or another "facilitator", and the government deposits a million baht into the account.

3) The VCF filters through loan applications and determines who may borrow and under what conditions such as interest, rate, and duration.

4) The borrowers access the loans through an intermediary. Each borrower must open an account with the minimum balance in order to transfer their loan.

5) The borrower repays the loan with interest. This can be done by typically deposits the repayment directly into the village fund account.

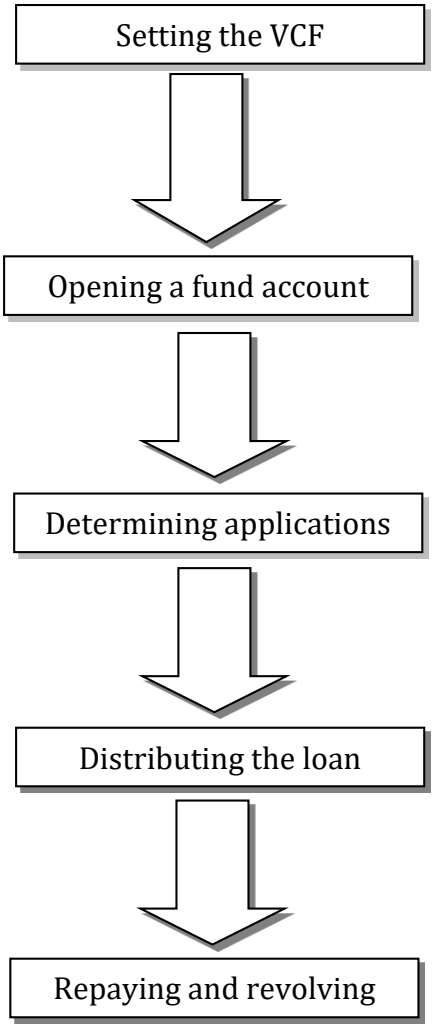


Figure 4.5 The NVUCF operational procedure

Theoretically, a number of rules govern the establishment and operating procedures of the committee:

- Three quarters of the adults in the village must be present at the meeting where it is established;
- The committee should have approximately 15 members, half of them are women;
- The amount per loan should not generally exceed 20,000 baht and should never exceed 50,000 baht
- The loans must charge a positive interest rate and have at least two guarantors.

In fact, the above rules are only partially implemented in practice. The VFC in the rural villages, to ease the flow of the fund, try to minimise the procedure of loan distribution and loosen some strict rules. In the case of Libong community, the village fund has been implemented since 2001 in Ban Koksaton (Moo 1), Ban Batupute (Moo 4), and Ban Langkhao (Moo 5). The fund was launched in Ban Saikaew (Moo 7) in 2005. This fund is called by local people as “Kongtun Mooban” or “Kongtun Ngeun Lan” or “Bia Lan”.

There are four main objectives of the fund. Firstly, this fund aims to create a flow of income, to stimulate economic activities within villages. Secondly, it is expected to promote and develop villages by creating better management systems. Also, this fund aims for nurturing financial independence of the communities. The ultimate dream of this fund is to increase and strengthen the potential of small towns and villages.

After launching this fund, government and policymakers hoped and expected that this programme would stimulate people’s participation and active interest in community development. On the economic side, the impact of this fund was aimed to a decrease unemployment, to reduce household expenses and a means of increasing household income (Tippayachan et al., 2006. p.41). This fund seems to have been successful in most villages but not quite as productive in rural areas. Libong community, according to the survey of this study, is one of several villages in rural Thailand where this fund has been struggling.

The next step of this fund is to rate the Village Funds on a variety of efficiency and "social" criteria. In any given year, those that are rated AAA are provided with a "bonus" of a further 100,000 Baht to add to their working capital. Moreover, VCFs can borrow between half a million and one million baht in additional funds from the BAAC or other facilitators. The VCFs that are ranked 1st or 2nd class by BAAC may borrow a million baht. The 3rd class VCFs may only borrow half a million baht.
This model aims to urge the competition between the VCFs in order to run the microfinance programme (Boonperm et al., 2007) by developing their loans allocation to good candidates. The VCFs with high efficiency gain finally can transform to rural banks and allow the loans across villages.

4.5.4 Other loans (SML, Wellbeing projects)

Beside the loans from BAAC, VF, and SGF, other credit and financial supports are provided. For example, a recent project called SML or Small and Medium Loans have been implemented in the community. This fund is supported by the government aims to help local people to overcome difficult situations. The fund is managed by the leader or elected leader for this fund. In Libong community, this fund was used for buying fertiliser or for buying equipment for organising ceremonies such as weddings or funerals in the village.

Another project in Libong is the wellbeing projects or WP supported by provincial government. This project also aims to help local people to cope with their financial instability. The fund is used to buy fertiliser and rice for the village. Then, anyone who is in financial difficulty can borrow the fertiliser and rice and pay it back later. However, from the participant observation and the in-depth interviews in the area, these two projects encounter the problem of transparency. The people who are in charge of managing the fund tend not to

4.6 Village fund and Savings group fund comparison

This section shows comparison results for loan use and the impact of the fund on different levels. To begin with, it is interesting to investigate how clients of each fund utilised the loans. It is found that the clients of the SGF used their loans for buying inputs for the first priority nearly double of the VF borrowers in the same purpose (See table 4.6).

Table 4.6 Loan use comparison

Loan group	Use1								Total
	Start new business	Buy inputs	Improve housing	School fee	Medical expense	Buying food	Buying other goods	Paying debt	
VF	12	52	14	10	1	5	4	22	120
(%)	(10.0)	(43.3)	(11.7)	(8.3)	(0.8)	(1.2)	(3.3)	(18.3)	(50)
SGF	13	101	5	1	0	0	0	0	120
(%)	(10.8)	(84.2)	(4.2)	(0.8)	(0)	(0)	(0)	(0)	(50)
Total	25	153	19	11	1	5	4	22	240
(%)	(10.4)	(63.8)	(7.9)	(4.6)	(0.4)	(2.1)	(1.7)	(9.2)	(100)

Source: own calculation from Libong household survey 2008/09

Considering debt payment purpose, it is very clear from table 4.6 that some of the VF's clients used the loans for this purpose for the first priority at a high percentage. From this loan use comparison, it can be concluded that the VF's clients used the loans in many purposes compare to borrowers of the SGF. A strong regulation, a vocational group in the SGF and clear purposes of the loans are the main clue for the efficiency use of the loans in the SGF. However, the different of the loan use may or may not create a positive impact on borrowers and their household. A further analysis will be discussed more in chapter 6.

Another way to portray the impact of the loans on the change or the improvement of the quality of life the clients is by analysing related activities from the fund. Group discussion and in-depth interviews with group members of each fund about group activity allow us to identify the impact of the fund in each level.

Table 4.7 shows the magnitude of impacts from each activity on individuals, households and community levels. The VF, with the minimal participation of members and low level of activities or projects for its member, relatively creates less impact in all levels.

Table 4.7 Activity and impact comparison

Activity	Group	Level of impact			Beneficiary group
		Client	Household	Community	
1. Household saving project	VF/SGF	****	*****	***	M+F
2. Household accounting training	VF/SGF	***	*****	***	F
3. Elderly and disabled welfare	SGF	***	***	****	M+F
4. Functional literacy	SGF	*****	***	**	M+F
5. Vocational projects	SGF				
- Provision of boats and fishery equipment		*****	*****	*****	M+F
- Provision of goats		****	****	****	M+F
- Grouper aquaculture		*****	*****	*****	M+F
- Handicraft group		****	****	****	F
- Seafood product		*****	*****	*****	F
- Organic fertiliser group		*****	*****	*****	M+F
- Batik group		****	****	****	F
6. Community environment projects	SGF				
- Mangrove plantation project		****	****	*****	M+F
- Sustainable fishery project		****	*****	*****	M+F
- Dugong conservation project		****	****	*****	M+F
- Hygiene project		****	****	*****	M+F
7. Sustainable home-stay	SGF	*****	*****	*****	M+F

Source: own data collection from group discussion and workshop with the VF and SGF's members, 2008.

4.7 Conclusion

This chapter provides and discusses an overview of characteristics of Libong, its background and important features of the area together with community livelihoods. Household and community organisation are explained through economic, political, and socio-cultural lenses. The intervention of the funds for the poor are discussed and linked to the way of life of local people. The impact of microfinance intervention in the individual, household and community level will be revealed and clarified in the next three chapters.

Chapter 5
Understanding Happiness and Its Determinants

5.1 Introduction

This chapter is an introduction to the empirical part of this study. It attempts to provide some evidence of happiness and wellbeing conceptualisations and related confounding variables. The results reported this chapter will be linked to the microfinance impact analysis in the next two chapters.

There are three main sections in this chapter. It starts with an exploration of perceptions and conceptualisations of happiness and wellbeing according to the household survey, in-depth interviews and focus group discussions. The first section explores how Thai people perceive and define happiness and wellbeing. Then, the results are compared to conceptual referent theory (CRT) of happiness which believes that the subjective evaluation of life as a whole is influenced by a person's notion of what a happy life is (Rojas 2003, 2005, 2010).

According to previous literature, the concept of wellbeing and happiness are claimed to be intertwined. Most previous studies use these terms interchangeably[16]. Thus, it is worth examining the linkages between happiness and wellbeing in order to see the correlation patterns whether these two ideas can be substituted for each other in further analyses.

The second part of this chapter revisits the happiness and income paradox which was originally introduced by Easterlin[17] in 1973. Since then this relationship has been replicated in many studies. In this study, the relationship between happiness and income is testified and discussed using different income proxies and various

[16] See Bardo 2010; Perović and Golem 2009; Veenhoven 1997, 2004, 2009; Inglehart 2008; Kalyuzhnova and Kambhampati 2008; Stevenson and Wolfers 2008; Galati, Manzano and Sotgiu 2006; Blanchflower and Oswald 2005; Ferrer-i-Carbonell 2005; Kingdon and Knight 2005, 2006; Hayo 2004; Schyns 2003; Easterlin 2001, 2003; Frey and Stutzer 2002; Gerdtham and Johannesson 2001.

[17] Easterlin's argued about the relationship between income and happiness in the article "Does Money Buy Happiness", 1973. He showed some evidence from different surveys related to the United States and other developing countries, including three communist nations and 11 Asian, African and Latin American countries.

methods such as correlation coefficients and ordered probit models. Previous literatures in economics focused on the effect of income on happiness[18]. This relationship tends to be inconclusive, however; a common finding in prominent literatures showed a weak link or merely a nonexistent bond between income and happiness. This section again raises the argument and re-investigates the relationship between income and happiness in order to resolve this puzzle.

Finally, the study is extended to analyse determinants of happiness by adding other variables in the happiness model. Even though income, a significant variable in economic theory, has been employed in many studies for testing the hypothesis of its effect on happiness, several studies have been seeking for other sources of happiness by testing some potential socio-economic and psychological variables. In the last section of this chapter presents the estimation of the effect of some economic and non-economic factors on the self-reported happiness.

5.2 Perception of happiness and wellbeing

Capturing the meaning of happiness and wellbeing is not a straightforward or easy task. Indubitably, asking a group of people to express their understanding and define the meaning of happiness and wellbeing raises similarities and differences in responses. This may be explained by respondents' characteristics and backgrounds, their culture and or it is just because of their life circumstances which affect their attitudes and beliefs. This section presents empirical results from in-depth interviews and group discussions in Libong community.

5.2.1 Happiness conceptualisation

According to the Royal Institute Dictionary (RID)[19], happy or 'Suk' in Thai was defined concisely as 'being in a state of physical and mental comfort.' Physical comfort in the Thai context covers two dimensions. One is related to an ease as a consequence of being in a decent environment such as living in a decent shelter or having adequate basic needs. The second dimension is the absence of physical pain

[18] The examples of the income and happiness relationship research including the study of Frijters et al 2004; Headey et al 2004; Lever 2003; Schyns 2003; Ferrer-i-Carbonell 2002; Hagerty and Veenhoven 2002; Headey and Wooden 2002; Easterlin 2001; Clark and Oswald 1995, 1996. See also a review of personal income and subjective wellbeing in Cummins 2000.

[19] This is the most widely known and used Thai dictionary produced by the Royal Institute of Thailand (RIT). This institute is responsible for Thai language planning and regulation (RIT 2012).

and suffering or being healthy. In the aspect of mental comfort, being happy from this definition can be referred to the state of being content. Thus, it is possible to conclude that a general definition of being 'happy' according to Thai etymology embraces both physical and psychological components of happiness.

This definition covers both physical and psychological aspects of happiness. However, by interviewing respondents about their perspective on happiness, the answers were fairly diverse. These results were categorised into groups as seen in the table below.

Table 5.1 Happiness definition

Happiness definition	Sample distribution		
	N	Male	Female
Outer or extrinsic value			
Living with family	111	55	56
No illness, being healthy	97	33	64
Afford children's education	93	56	37
Live well, wealth	66	41	25
Having food to eat, having money	40	18	22
Live in society or community peacefully	17	6	11
Working or contributing to community and society	14	12	2
Inner or intrinsic value			
Having peace of mind	36	10	26
Being content	35	8	27
Total	**509**	**239**	**270**

Living with family was considered to be the main concept of happiness of villagers. Being healthy or no sickness was another definition most people defined as happiness. Interestingly, children's education was put in the equation of villagers' happiness. This could be explained as a cultural value which represents the success or achievement of parents and family. Seeing their children finishing high school or getting a degree indicated their success and made them proud and satisfied. Also, they mentioned that they would be accepted by their neighbours and community.

Objective concepts such as having assets, luxury goods, money were defined as happiness as well. Very few people viewed their happiness as living in society or community peacefully and working or contributing to community and society.

Some people conceptualised happiness as the intrinsic value. Some of them reported that happiness was a state of having peace in mind or being content with a simple life. These concepts were declared more in women than in men.

Comparing this results to the conceptual reference theory of happiness of Rojas, it was found that majority of Libong villagers understood the word 'happiness' by attaching their happiness to outer values more than inner values. The idea of tranquillity, stoicism and virtue were quite rare to find. Another interesting about happiness conceptualisation in this study was how close these concepts of happiness related to the definition of wellbeing which will be explored in the next section.

Table 5.2 Conceptual referent of happiness [20]

Conceptual referent	Value	Description	Simple phrase
Carpe diem	Outer	Happiness is the present pleasure and enjoyment. It is about enjoying now as much as possible.	Happiness is to enjoy every moment in life. Seize the day.
Enjoyment	Outer	Happiness is joyfulness and absence of pain. It is the enjoyment of those goods that provide comfort. It is the satisfaction of all human needs and wants.	Happiness is to enjoy what I have got in life.
Fulfilment	Outer	Happiness is the realization of our nature and the fulfilment of our essence as human beings. Happiness is in that activity that constitutes the ultimate goal of each human being.	Happiness is in fully developing our abilities.
Satisfaction	Outer	Happiness is a feeling of life's elation that comes with an intuitive judgment about oneself and about our surrounding world.	Happiness is being satisfied with what I have and what I am.

[20] These happiness phrases have been adapted from conceptual conference heterogeneity idea of Rojas (2003).

Stoicism	Inner	Happiness is a permanent state of contentment with life and with what happens in life. This state implies renunciation, austerity, acceptance, and resignation; taking things as they are and as they come out.	Happiness is accepting things as they are.
Tranquillity	Inner	Happiness is a state of tranquillity, the absence of worries that takes place with prudence, moderation, measurement, and judicious wants.	Happiness is in living a tranquil life, not looking beyond what is attainable.
Utopian	Inner	Happiness is an ideal that guides human action. It is perfection itself conceptualized action. It is perfection itself conceptualized as the synthesis of virtue and pleasure, but in reference to other life. It is a wanted but unreachable good.	Happiness is an unreachable ideal we can only try to approach.
Virtue	Inner	Happiness is a spiritual state produced by the feeling of acting properly, according to one's consciousness.	Happiness is a sense of acting properly in our relations with others and with ourselves.

5.2.2 Wellbeing conceptualisation

Capturing a concept of wellbeing is as difficult as defining the meaning of happiness due to the complexity and multidimensionality of its nature. This section explores how individuals understand and conceptualise wellbeing. In order to grasp the individuals' perception of wellbeing, villagers were asked to express their personal comprehension and interpretation of the word.

Etymologically, wellbeing in the Thai language has been semantically shifted from a narrow perspective in the past to a broader view in the modern and dynamic society. The terminology has changed from "Kin Dee Yoo Dee", which is an old-style word, focusing mainly on the objective aspect of wellbeing to "Yoo Dee Mee Suk", which includes the subjective dimension as well (See figure 5.1). Both words are still in use nowadays, however; "Yoo Dee Mee Suk" is a more formal use of wellbeing[21]. In addition, the former word more conveys the meaning of wellbeing on health,

[21] This is partly derived from own analysis and part from some discussion with Thai linguists.

consumption and living environment or objective wellbeing while the new term adds the aspect of subjective wellbeing as well.

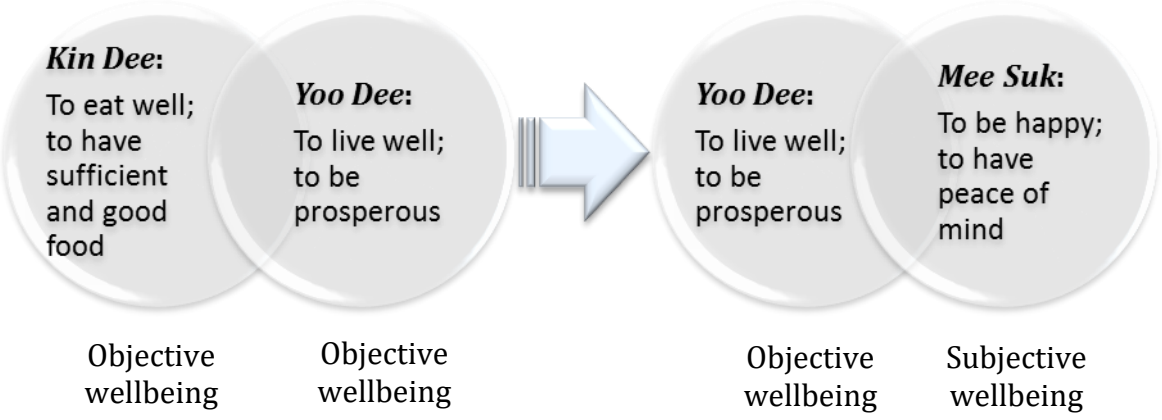


Figure 5.1 Evolution of wellbeing terminology in Thailand
Source: own summary from group discussions and interviews

The change of wellbeing terminology reflects a value change of people in society. This change simply shows that wellbeing in the Thai words literally covers basic human needs to mental or psychological aspects of wellbeing, which are closely associated to happiness. However, empirical evidence from household survey, in-depth interviews and group discussions in Libong community showed respondents defined and connected wellbeing to different aspects of their lives. The definition of wellbeing is categorised and illustrated as shown in figure 5.2.

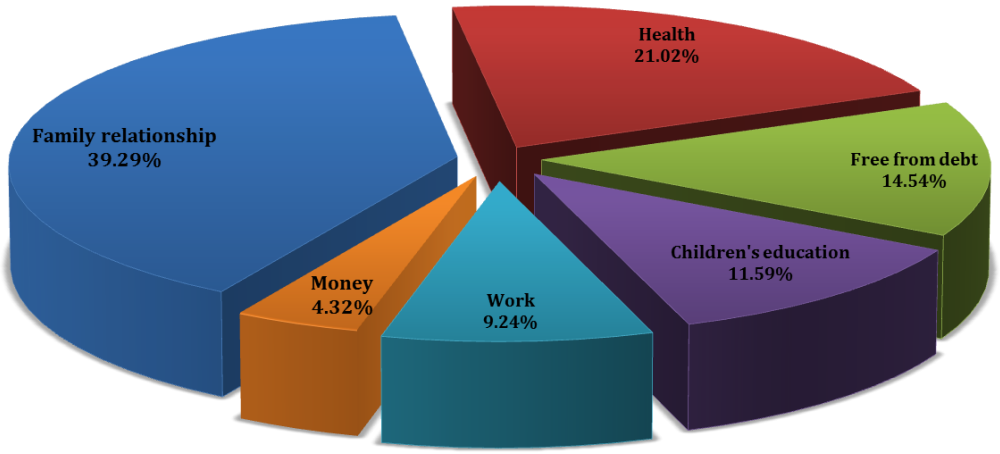


Figure 5.2 Wellbeing perspectives in Libong community
Source: own calculation.

It was found that the wellbeing perceptions of people in Libong community were related to family relationship, health, free from debt, children's education, work, and

money respectively. By comparing this result to other studies; for instance, a study of Layard (2005) which considered the main sources of happiness in a sample of western countries, it shows both similarities and differences. Those factors from a study of Layard called the 'Big Seven' includes family relationship, financial situation, work, community and friends, health, personal freedom and finally personal values. The similarity here is a close and warm relationship in the family is considered to be a crucial factor from both sets of results. Financial situation, work, and health are also confirmed factors in Economics and objective wellbeing studies. However, the preliminary results in Libong community did not show other wider perception on social interaction and personal freedom and values. Thus, it is interesting pursue this. By looking at the in-depth interview results, it helps reveal how respondents conceptualise their wellbeing definition.

Family relationship

Figure 5.2 indicates that most Libong villagers looked at wellbeing through the lens of family relationship (39.29 percent). They reported that the meaning of wellbeing was about living in a warm family with understanding among family members. For example, one villager argued that *"Wellbeing is about relationship in family. It is the biggest thing of all…"* (In-depth interview, Supa, 39 year old female). She added that "*I always talk to my kids about everything. They consult me when they have problems. We have a great relationship".* Similarly, another villager emphasised that *"Wellbeing in my opinion, I live with my wife and kids. We are together, talk, understand each other. This is wellbeing for me…"* (In-depth interview, Yaba, 33 year old male). This result reflects the importance of family in Thai society. It affects how they define the meaning of wellbeing which has a strong link to family relationship.

Health

Unsurprisingly, being healthy is also considered to be equivalent to wellbeing. According to the household survey, 29.02 percent of respondents defined wellbeing as having good health or in other words living without pain or disease. One villager emphasised that *"I would like to be healthy…wellbeing is related to good health if you ask me. I do exercise if I can… Yoga or aerobic dance…"* (In-depth interview, Lunai, 39 year old female). Another respondent added *"Wellbeing is no pain, no illness I think"* (In-depth interview, Sun, 53 year old male). In general, Thai people desire to be

healthy. The belief in good health and good life is still in Thai contemporary society even with the influx of western culture and modernisation. Cultural and traditional activities related to health promotion can be seen nowadays everywhere in the country. This is the reason why health is very vital for Thai wellbeing.

Free from debt

The third group of respondents had another view on the definition of wellbeing. Although this group is not very large, approximately 14.54% of respondents, but their perception on wellbeing is worth considering. They reported that their perception of wellbeing would exist if they could live without debt. "*Wellbeing is no debt. If we do not have debt, we will not be stressed at all",* argued by a young mother of two children (In-depth interview, Nareerat, 28 year old female). Another respondent supported the interpretation of wellbeing as a debt-free life. He commented that *"Wellbeing is we do not have debt. We do not have to borrow any money from anyone. Spend and use what we have and what we can afford"* (In-depth interview, Wichai, 34 year old male). This concept of wellbeing showed that financial situation; debt in this case, was related to emotional or subjective wellbeing. Wellbeing in this sense was explained as freedom and autonomy, free from negative feeling such as stress or anxiety.

Children's education

Another dimension which is very important for Thai perspective of wellbeing is children's education. Generally, the value of children's education in Libong community and in Thai society is very strong and is one of the main goals for most family. Providing the highest education to children is expected to be an indicator to evaluate parents' achievement in Thai's value. A 35 year old man asserted that *"I do not want to have a lot, my wellbeing is to see my kids to go to school, study hard and be good, just study and they are not obsessed to bad things"* (In-depth interview, Donrasak, 35 year old male). Another villager emotionally argued that his wellbeing is all about his children. He said *"Wellbeing is all about my kids. I do not want to see them to be alcoholics or drug addicts like marijuana or Kratom[22]. I want to see them go to school"* (In-depth interview, Satien, 47 year old male). According to this

[22] Kratom is scheduled in category 5 of the Narcotics Acts (1979), in the same category as cannabis and magic mushrooms (the least punitive category).

wellbeing perspective, they felt that they could do anything for children to attain the highest education level. On the one hand, they seemed to be relaxed and calm if their children behaved properly and graduated high school or first degree, they certainly were accepted from their neighbours in the community to their achievement, on the other hand.

Work

Having a decent and stable job was considered to be another definition of wellbeing. A 30 year old farmer expressed his idea of wellbeing as having a decent job. He mentioned that *"Wellbeing is having a good and stable job, a job that I do not have to travel much"* (In-depth interview, Morad, 30 year old male). Likewise, a 32 year old fisherman also defined his wellbeing as having a good job. *"I like working. When I work, I am happy." "My wellbeing is I have a job, I can work"*, he claimed (In-depth interview, Wichit, 32 year old male). According to this definition, work seemed to be very important not only a source of income, but also affect personal achievement in terms of capability or feeling capable to do something worthwhile.

Money

"Wellbeing is money", strongly and confidently revealed by a rubber farmer (In-depth interview, Subaiton, 35 year old female). She added *"Rich people! Wellbeing is like rich people."* Having a lot of money that she could afford what she and her family wanted was her understanding of wellbeing. Another rubber farmer supported this concept. He mentioned that *"Wellbeing is having money to invest. If you do not have money, you have only your idea, you cannot do anything. We need money so we can do something"* (In-depth interview, Hmood, 30 year old male). This conceptualisation came from respondents' experience which they found that money or wealth offered them the opportunity to enjoy what they thought the better quality life. This wealth illusion disabled them from appreciation in other aspect of wellbeing. According to Lyubomirsky's work, she concluded that "wealth allows people to experience the best that life has to offer, it ultimately undermines their ability to savor life's little pleasure.

5.2.3 Multidimensional concepts of wellbeing

According to the previous section, it was found that wellbeing perspectives of individuals were very diverse and subjective. It depends on one's background,

values and beliefs. However, theoretically, welling is a complex and multidimensional concept. Empirically, some respondents' responses clearly explained how they understood and interpreted the complexity of this terminology.

Example 1

The first case study is a 39 year old divorced fisherwoman. She lives with two children. Her perception of wellbeing is similar to other villagers but there are some interesting ideas worth considering. At first when she was asked what her understanding about wellbeing was, she was perplexed for a moment, and then elucidated the meaning of wellbeing very well. She said:

> *"Wellbeing is the coexistence of ample money, mind and body. By body here I mean to be healthy, to do some exercise... Money means having enough and not to be decadent and not to have to keep up with the Joneses... Mind means to be optimistic about everything, towards your neighbours. Be kind to others. Be honest... So wellbeing means that everything has to be good. Having good health, no pain, no illness, having enough money, and having a peaceful mind, are all summed up as 'wellbeing'."*
>
> (In-depth interview, Lunai, 39 year old female).

Box 5.1 Multidimensional perspective of wellbeing 1

Example 2

Another case study interview was conducted with a 47 year old rubber farmer and grouper fisherman. He declared his wellbeing perspective as:

> *"Wellbeing for me means family's wellbeing. I would like my children to behave so I will feel relaxed. Also, wellbeing is about work. I will be pleased if I have a good job and my four children study hard. Another thing is about illness. Without pain and illness, I will live peacefully. So this is wellbeing in my opinion."*
>
> (In-depth interview, Sa-Eid, 47 year old male).

Box 5.2 Multidimensional perspective of wellbeing 2

Example 3

This example was excerpted from fishermen's group discussion. They summarised that wellbeing was comprised of various aspects. They concluded:

> *"We think that wellbeing is involved with many things. But the most important thing for us is being employed or having a job and stay with family. Staying with wife and kids and everybody in the family has mutual understanding equal to wellbeing. Having enough money and some saving for family is also important. Good neighbours, no crime are wellbeing too. Finally, no one in the family should be healthy, without sickness."*
>
> (Fishermen's group discussion).

Box 5.3 Multidimensional perspective of wellbeing 3

As can be seen from the interview results, conceptualisation of wellbeing by individuals or a group of people comprised a variety of aspects. Some similarities could be found across individuals. Using a group discussion method, wellbeing could be defined and compared in table 5.3.

Table 5.3 Wellbeing conceptualisation

Layard's 'Big Seven'	Fishermen's group	Grouper aquaculture group	Women's group
Family relationship	- The family members have mutual understanding - Being near the family		- The family members have mutual understanding - Well-behaved children
Financial situation	- Having disposable income - Having the ability to save - Having no financial hardship	- Having disposable income - Having some saving - No financial worries - No debt/ being solvent - Having financial stability - Not having too much financial burden	
Work	- Being employed	- Having a good job	
Community and friends	- Having no malicious thoughts towards each other		- Being positive towards others
	- No crime or petty theft		- Having no neighbourly disputes
Health	- No sickness		- Being fit and healthy - Having good food
Personal freedom			- Having a sense of freedom
Personal values	- Having a sense of morality		
Other aspects			
Psychological wellbeing			- Feeling content (at ease) or relaxed - Having no stressed

Table 5.3 compares wellbeing conceptualisation result from three group discussions to the Layard's study. It shows some similarities and differences between groups. First, the fishermen's group articulated their thoughts very clearly and indicated that wellbeing was a mixture of different domains of their life such as mutual understanding in the family, being employed, having no financial hardship and being healthy. In contrasts, members of the grouper aquaculture's group viewed their wellbeing through more objective aspects of wellbeing. Disposable income, saving, being solvent, work and financial stability were defined as their wellbeing concept. Finally, the women's group expressed some similarities to the fishermen's group

including the family, community and friends, and health domains. However, the women's group expressed one aspect of their wellbeing as equaled to freedom in their life and being content and feeling relaxed or without stress, which was different from the other two groups.

The differences between groups can be further analysed in order to understand how people behave in a certain way. This will be discussed in the next chapter.

5.2.4 Linkages between happiness and wellbeing

According to the results of happiness and wellbeing conceptualisations, it was clear that there were some connections and overlaps between those two notions. This section aims to examine linkages between happiness and wellbeing using both quantitative and qualitative methods.

Proposition 1: there is a relationship between happiness and subjective wellbeing

$H = SWB(\text{PA}, \text{NA}, \text{LS})$

Where H is the self-reported happiness, SWB stands for the subjective wellbeing. PA variables indicate positive affects or pleasant feelings, NA variables represent negative affects or unpleasant moods, and LS refers to life satisfaction.

H1 : H = f(PA)
Happiness is significantly positive associated to subjective wellbeing

H2 : H = f(NA)
Happiness is significantly negative associated to subjective wellbeing

Here the relationship between happiness and wellbeing was examined using some coefficients including symmetric and asymmetric Somers' D, gamma statistics and Spearman's rho. The results are shown in the following table.

Table 5.4 Happiness and subjective wellbeing relationship

PANAS/LS	Happiness-subjective wellbeing correlation			
	Somers' D[23]		Γ[1]	Spearman's ρ
	Symmetric	Asymmetric[24]		
Positive affects – happiness correlation = 0.303* **				
Interested	0.272***	0.258***	0.539***	0.290***
Excited	0.228***	0.214***	0.400***	0.245***
Strong	0.196***	0.167***	0.319***	0.224***
Enthusiastic	0.306***	0.271***	0.497***	0.342***
Proud	0.337***	0.290***	0.526***	0.385***
Alert	0.249***	0.224***	0.390***	0.279***
Inspired	0.258***	0.237***	0.435***	0.282***
Determined	0.099***	0.090***	0.177**	0.107**
Attentive	0.288***	0.251***	0.474***	0.325***
Active	0.238***	0.200***	0.385***	0.279***
Negative affects – happiness correlation = - 0.197* **				
Distressed	-0.415***	-0.566***	-0.716***	-0.459***
Upset	-0.353***	-0.464***	-0.713***	-0.386***
Guilty	-0.287***	-0.498***	-0.733***	-0.333***
Scared	-0.296***	0.319***	-0.516***	-0.319***
Hostile	-0.186***	-0.191***	-0.310***	-0.201***
Irritated	-0.224***	-0.281***	-0.403***	-0.246***
Ashamed	-0.343***	-0.400***	-0.678***	-0.370**
Nervous	-0.196***	-0.196***	-0.363***	-0.213***
Stressed	-0.188***	0.190***	-0.346***	-0.204***
Afraid	-0.278***	0.292***	-0.529***	-0.300***
PANAS – H Correlation = 0.388* **				
Life satisfaction – happiness correlation				
Life satisfaction as a whole	0.305***	0.265***	0.516***	0.329***
Satisfaction with family's living	0.261***	0.232***	0.466***	0.281***
Satisfaction with family relationship	0.277***	0.258***	0.461***	0.297***

Note: *** $p < 0.01$

Table 5.4 shows the relationship between happiness and wellbeing. First, it was found that positive affects had a significant positive correlation with happiness with a correlation coefficient of 0.303. By looking at the sub-dimension, feeling interested

[23] Somers' D and Gamma test (**Γ**) apply an estimation of the Monte Carlo procedure with a sample of size 10,000

[24] Asymmetric measure here treats happiness as dependent.

and proud seemed to have the highest correlation to happiness among all pleasant moods.

Whereas negative affects had an inverse relationship with happiness with a correlation coefficient of -0.197. Feelings of distress, upset, guilt and shame appeared to have the strongest association to self-report happiness among all negative feeling considering three correlation methods.

In addition, life satisfaction indicators were other sets of questions measuring subjective wellbeing. These three indicators represented cognitive wellbeing while the PANAS evaluated the affective aspect of subjective wellbeing. Among those three life satisfaction indicators, life satisfaction as a whole seemed to be the highest correlated to self-reported happiness with a correlation coefficient of 0.3876.

As can be seen from the results, subjective wellbeing indicators including positive and negative affects and life satisfaction measures are significantly correlated to self-reported happiness. Thus, using those indicators provides different ways of measuring happiness and subjective wellbeing which is very useful for happiness analysis.

5.3 The income-happiness paradox revisited

Easterlin states that 'the happiness-income paradox' occurs when happiness varies directly with income at a point in time both among and within nations whereas over time happiness does not increase when a country's income increase. "If there were no positive relation in the cross-section, there would be no paradox" (Easterlin, 2010).

5.3.1 Relationship between income and happiness

Most people in the society are highly inspired to increase their income as they believe that having more income would make them happier. This value is unlikely to be true and mostly an illusion (Kahneman et al., 2006; Quiñones, 2006).

The distribution of self-reported happiness is relevant with findings in the literature[25]. It was found that 84.1 percent of sample reported that they are either fairly happy or very happy. This result is similar to other studies using a simplified or multi-layer classification of happiness. It can be implied that the results from income-happiness relationship model will not be strong. This relationship will be further explored in the section 5.4.

While most people believe that having more income would make them happier, Princeton University researchers have found that the link is greatly exaggerated and mostly an illusion. To verify the relationship between income and happiness, we first examine the simple point-of-time correlations between income and happiness.

Table 5.5 Mean happiness, household and equivalent household income by income quartile

PIQ	$\overline{PI}$	Self-reported happiness			N	$\overline{H}$	r
		[H = 1]	[H = 2]	[H = 3]			
1stQ	4,067.86	20.0	66.4	13.6	140 (27.5%)	1.94	$\Gamma = 0.240^{***}$ $D = 0.116^{***}$
2ndQ	6,208.48	20.3	70.3	9.3	118 (23.2%)	1.89	
3rdQ	8,866.89	12.2	78.4	9.5	148 (29.1%)	1.97	
4thQ	19,125.24	10.7	57.3	32.0	103 (20.2%)	2.21	
Total	9,006.48	15.9	69.0	15.1	509 (100%)	1.99	
HIQ	$\overline{HI}$	**Self-reported happiness**			**N**	$\overline{H}$	**r**
		[H = 1]	[H = 2]	[H = 3]			
1stQ	5,668.85	21.5	66.9	11.5	130 (25.5%)	1.90	$\Gamma = 0.302^{***}$ $D = 0.145^{***}$
2ndQ	8,873.67	19.1	74.0	6.9	131 (25.7%)	1.88	
3rdQ	12,450.39	11.8	76.4	11.8	127 (25.0%)	2.00	
4thQ	21,680.58	10.7	57.9	31.4	121 (23.8%)	2.20	
Total	11,992.04	15.9	69.0	15.1	509 (100%)	1.99	

[25] See other findings in Rojas 2008; Hills and Argyle 2002; Argyle 1999; Diener and Diener 1996; Veenhoven 1993.

Table 5.5 Continued

EHIQ	$\overline{EHI}$	Self-reported happiness			N	$\overline{H}$	r
		[H = 1]	[H = 2]	[H = 3]			
1stQ	2,573.80	20.5	68.5	11.0	127 (25.0%)	1.91	Γ = 0.264*** D = 0.155***
2ndQ	4,205.74	18.5	72.3	9.2	130 (25.5%)	1.91	
3rdQ	5,898.42	14.5	73.4	12.1	124 (24.4%)	1.98	
4thQ	10,519.34	10.2	61.7	28.1	128 (25.1%)	2.18	
Total	5,798.62	15.9	69.0	15.1	509 (100%)	1.99	
EI	$\overline{EI}$	**Self-reported happiness**			**N**	$\overline{H}$	**r**
		[H = 1]	[H = 2]	[H = 3]			
0	0	28.4	56.9	14.7	102 (20.0%)	1.86	Γ = 0.147** D = 0.071***
EI_1 Low	1,852.15	11.8	73.7	14.5	186 (36.5%)	2.02	
EI_2 Medium	3,255.10	16.3	71.4	12.2	98 (19.3%)	1.96	
EI_3 High	6,960.57	11.4	69.9	18.7	123 (24.2%)	2.07	
Total	2,985.56	15.9	69.0	15.1	509 (100%)	1.99	
ΔY		**Self-reported happiness**			**N**	$\overline{H}$	**r**
		[H = 1]	[H = 2]	[H =3]			
Decrease greatly		40.0	52.0	8.0	25 (4.9%)	1.68	χ^2 = 32.001*** V = 0.177***
Decrease some		25.3	60.4	14.3	91 (17.9%)	1.89	
Stay the same		11.2	77.2	11.6	241 (47.3%)	2.00	
Increase some		13.1	63.1	23.8	122 (24.0%)	2.11	
Increase greatly		16.7	66.7	16.7	30 (5.9%)	2.00	
Total		15.9	69.0	15.1	509 (100%)	1.99	

Note: *** $p < 0.01$, Not too happy [H = 1], fairly happy [H = 2], very happy [H = 3]

It was evident from table 5.4 that although there was a significant correlation according to the Somers'D correlation coefficient, magnitude of the relationship was low. The coefficient of 0.116 considering happiness as a dependent variable from this empirical result paralleled many previous happiness studies supporting the low relationship between happiness and income.

However, comparing the mean happiness by the household income group, the distribution of those declaring themselves "very happy" varies from 11.5 percent in the lowest income quartile to 31.4 percent in the highest. Table 5.5, which is based on data from the Libong household survey, shows the relationship between mean happiness, mean household income and mean equivalence income. The equivalence income[26] corrects for the size of the household by the following formula.

$$Y_e = \frac{Y_h}{\sqrt{N_h}}$$

Where Y_e = Equivalence income

Y_h = Household income

N_h = Number of household members

As we can see from data, the mean happiness rating (The mean happiness is calculated based on the scores of "not too happy": $H_i = 1$, "fairly happy: $H_i = 2$, and "very happy": $H_i = 3$) rises with the household income. For the lowest quartile of the household income, the mean happiness score is 1.90, for the forth and the highest quartile, it is 2.20. Data for the equivalence income shows a similar relationship. The mean happiness score is 1.91 for the first quartile, for the highest equivalence income quartile, it rises to 2.18. This data shows a correlation between income level and happiness. Using both household income and equivalence income, with adjustment to the size of household composition, the proportion of persons rated "very happy" is very high in the highest quartile (31.4 % and 28.1 % for the mean household income and mean equivalence income respectively).

According to this study, however, household income is not the only proxy for measuring the household financial status. Expenditure and the income change are additional variables signifying household financial circumstances. The correlation coefficients showed that there were significantly correlated between income variables and happiness. It was also found that the income change was the highest correlated to self-reported happiness score with the Cramer's V of 0.177.

[26] The equivalence income is an equivalence scale for household income adjustment. The needs of a household grow with each additional member but not in a proportional way due to the economies of scale in consumption. Needs for electricity; for example, will not be four times as high for a household with four members than for a single person (Burniaux 1998; Atkinson 1995; Hagenaars 1994; OECD 1982, 2008). Here, the square root equivalence scale implies that, for instance, a household of four persons has needs twice as large as one composed of a single person.

5.3.2 Income effect on happiness and wellbeing

It was found from the last section that there was a weak link between income and wellbeing. However, it is worth considering the effect of income on happiness. Using ordered probit model and Spearman's rho, it was found the income impacts on self-reported happiness as shown in the table below.

Table 5.6 The income effect on happiness

Y-H correlation / Income proxies (Y)	Ordered probit analysis with robust test			Marginal effect [H=3]	Spearman's ρ	N
	β	z	R^2			
Personal income (inc)	0.00004^{***} (p = 0.000)	4.29	0.029	0.000009^{***} (p = 0.000)	0.155^{***} (p = 0.0004)	509
Household income (hhinc)	0.00004^{***} (p = 0.000)	5.27	0.042	0.00004^{***} (p = 0.000)	0.209^{***} (p = 0.0000)	509
Equivalent household income (eqinc)	0.00009^{***} (p = 0.000)	5.10	0.040	0.00002^{***} (p = 0.000)	0.201^{***} (p = 0.000)	509
Extra income (incex)	0.00006^{***} (p = 0.001)	3.34	0.015	0.00001^{***} (p = 0.001)	0.107^{**} (p = 0.0156)	509
Income change (Δy)	0.9034^{***} (p = 0.001)	3.10	0.019	0.2552^{***} (p = 0.007)	0.151^{**} (p = 0.0006)	509

Note: *** $p < 0.01$

According to the results, it is clear that income has a significant effect on self-reported happiness. But the magnitude of the income effect was not strong in all income proxies. Interestingly, the change of income had a significantly high impact on self-reported happiness with the coefficient of 0.934. The low level of association between income and happiness indicates that income was not the only source of happiness and wellbeing. Thus, in the next session, happiness is further analysed by adding other socio-economic factors.

5.4 Determinants of happiness and wellbeing

In order to test that happiness and wellbeing are related to different domains of life besides income, various socio-economic variables were added into the analysis. First, self-reported happiness was correlated with some selected factors using correlation coefficient methods. Then, it was employing ordered probit and semi-non parametric models were used to examine the impact of those variables on happiness. Finally, the results are discussed alongside qualitative data analysis.

5.4.1 Socio-economic determinants of happiness

Although income has been shown to be an important factor affecting subjective wellbeing, the evidence suggests that some negative conditions such as poor health, separation, unemployment and lack of social contact are all strongly negatively associated with subjective wellbeing (Dolan, Peasgood, and White 2008, p. 94). According to the review of all the potential influences on wellbeing in the literature, Dolan (2008) concluded the main seven broad categories affecting wellbeing including

1) Income
2) Personal characteristics (Age, gender, ethnicity, personality)
3) Socially developed characteristics (Education, health, type of work, unemployment)
4) Time allocation (Hours worked, commuting, caring for others, community involvement and volunteering, exercise, religious activities)
5) Attitudes and beliefs towards self or other's life (Attitudes towards our circumstances, trust, political persuasion, religion)
6) Relationships (Marriage and intimate relationship, having children, seeing family and friends)
7) Wider economic, social and political environment (Income inequality, unemployment rates, inflation, welfare system and public insurance, degree of democracy, climate and deprivation of the area, urbanisation)

Happiness and its related determinants were analysed and the results obtained are shown in the following table.

Table 5.7 The happiness distribution by socio-demographic factors and correlation

Socio-demographic variable	Self-reported happiness			N	Correlation
	Not too happy [H = 1]	Fairly happy [H = 2]	Very happy [H = 3]		
Gender					
Female	44 (16.3%)	180 (66.7%)	46 (17.0%)	270	$\chi^2 = 1.877$ V = 0.061
Male	37 (15.5%)	171 (71.5%)	31 (13.0%)	239	
Age					
0-25	12 (46.2%)	3 (11.5%)	11 (42.3%)	26	$\Gamma = 0.053$ d = 0.027
26-35	15 (8.2%)	149 (81.4%)	19 (10.4%)	183	
36-45	25 (17.2%)	108 (74.5%)	12 (8.3%)	145	
46-55	23 (28.0%)	49 (59.8%)	10 (12.2%)	82	
More than 55	6 (8.2%)	42 (57.5%)	25 (34.2%)	73	
Marital status					
Single	15 (57.7%)	10 (38.5%)	1 (3.8%)	26	$\chi^2 = 37.124^{***}$ $V = 0.191^{***}$
Married	61 (13.3%)	326 (71.0%)	72 (15.7%)	459	
Widowed, separated or divorced	5 (20.8%)	15 (62.5%)	4 (16.7%)	24	
Total	81 (15.9%)	351 (69.0%)	77 (15.1%)	509	

Note: *** $p < 0.01$

Table 5.7 Continued

Socio-demographic variable	Self-reported happiness			N	Correlation
	Not too happy [H = 1]	Fairly happy [H = 2]	Very happy [H = 3]		
Education					
No education	8 (61.5%)	3 (23.1%)	2 (15.4%)	13	
Primary or lower	36 (13.3%)	197 (72.7%)	38 (14.0%)	271	
Lower secondary	24 (21.4%)	74 (66.1%)	14 (12.5%)	112	$\Gamma = 0.100$ D = 0.049
Upper secondary	7 (10.3%)	47 (69.1%)	14 (12.5%)	106	
Vocational education	7 (15.8%)	47 (71.1%)	14 (13.2%)		
Higher education	0 (0.0%)	3 (42.9%)	4 (57.1%)	7	
Health					
Healthy	48 (11.7%)	299 (72.7%)	64 (15.6%)	411	
Having a chronic disease	33 (33.7%)	52 (53.1%)	13 (13.3%)		$\chi^2 = 28.782^{***}$ $V = 0.238^{***}$
Family's health					
No one with chronic disease	50 (11.7%)	309 (72.5%)	67 (15.7%)	426	
One with chronic disease	31 (37.3%)	42 (50.6%)	10 (12.0%)	83	$\chi^2 = 34.103^{***}$ $V = 0.259^{***}$
Locality					
Remote or isolated area	44 (84.6%)	6 (11.5%)	2 (3.8%)	52	
Village centre and vicinity	37 (8.1%)	345 (75.5%)	75 (16.4%)	457	$\chi^2 = 204.35^{***}$ $V = 0.634^{***}$
Total	81 (15.9%)	351 (69.0%)	77 (15.1%)	509	

Note: *** $p < 0.01$

Table 5.7 shows happiness distribution by socio-demographic variables and the correlation between happiness and those factors. It was found that gender, age and

education attainment were not significantly correlated to self-reported happiness whereas marital status, health, family's health and locality showed significant associations with self-reported happiness at the level of 0.01 significance. The variables with the highest correlation coefficients were locality, health and family's health.

Considering the association between locality and happiness, it was found that people who lived in remote or isolated areas tended to report a lower level of happiness than ones who lived in the village centre or nearby. It was found that 84.6 percent of people in who lived in the remote or isolated areas reported that they were not too happy. Whereas only 8.1 percent of people in the village or nearby said that they were not happy. Comparing the correlation between locality and happiness to other variables, this correlation was quite strong using the Cramer's V statistics.

The reason behind this can be explained from the hardship in daily life of villagers. The result from the in-depth interview analysis found that some respondents in the remote area revealed their unpleasant experiences living in such environment. One old lady living with her daughter and her nephew mentioned that

> *"It was hard sometimes to live here. When I want to buy some food, I have to go to the village. Especially during the rainy season or when it rains heavily, the road down the hill was very dangerous. So we cannot go to the shops and do not have food sometimes."*
>
> (In-depth interview, Yeena, 62 year old female)

Box 5.4 Excerpt about wellbeing and happiness

As a result, this hardship of living in such adversity environment affected the subjective wellbeing and happiness. People who lived in the remote areas seemed to report a lower level of happiness.

Health and family's heath are not surprisingly correlated with self-reported happiness. It was very clear that people who are healthy or without any chronic

disease and the ones whose family members were all healthy would declare that they were 'very happy'. On the other hand, people who had a chronic disease or someone in the family was suffering from any kind of disease tended to report that they are 'not too happy'.

Some examples from the in-depth interviews showed the linkage between health and happiness. They revealed that

> *"I am not too happy as I am not healthy. I am always sick all the time. It is difficult to do things when I am not well. "*
>
> (In-depth interview, Jayoi, 48 year old female).
>
> *"I am worried about my kids. My kids are not healthy, especially my youngest son. He's always sick. I would like them to be stronger and having good food."*
>
> (In-depth interview, Jayoi, 42 year old male).

Box 5.5 Excerpts about health condition and unhappiness

From these examples it was clear that happiness and wellbeing were not solely influenced by income or financial factors. Perhaps it could be concluded that other factors such as health or location where one lives have a much stronger effect on happiness than income. In order to answer this puzzle, different happiness equations are analysed in the next section.

5.4.2 Happiness equations

Here, the analysis uses the Libong household survey data set in order to examine the relationship between socio-economic factors and happiness. Assume that the self-reported happiness function can be defined as

$$H^* = f(Y, X, Z, \Psi)$$

where Y includes income variables (personal income, household income and equivalent household income). X is a set of socio-demographic factors including age,

education, health, marital status, health, family's health, and locality. Z is a set of variables related loan borrowing situation of the family including loans for debt payment, loan amount, and loan repayment experience. Finally, Ψ represents psychological wellbeing factors including positive and negative affects and subjective wellbeing variables.

The happiness function for analysis is

$H^* = f$ (Gender, income, age, education, health, marital status, health, family's health, expenditure, saving, loans for debt payment, loan amount, locality, positive affects, negative affects, subjective wellbeing, loan repayment experience)

By taking the approach from empirical happiness study of Frey and Stutzer (2002) and several other literatures, this present study uses individuals responses the question "Taking all things together, how would you say things are these days? Would you say you are _____., where individuals can respond as "very happy", "fairly happy", or "not too happy". This question is employed as one of subjective wellbeing indicators.

The linkage between the observed subjective wellbeing or happiness, which is measured on ordered scale, and happiness determinants including socio-economic factors is assumed to be in the form of ordered probit type according to previous studies[27] and theoretical discussions including studies of Amemiya (1981), Cameron and Trivedi (1986), and Greene (1993).

In this study, the main variable measuring subjective wellbeing is the Satisfaction with Life Scale (SWLS) or happiness. This variable is a single-item measure for happiness or life satisfaction describing how people are satisfied or feel happy with their life. This method for measuring happiness was employed in other research noted in box 5.2. Here, the self-reported happiness variable is rated into three categories:

[27] Mckelvey and Zavoina (1975), Winkelmann and Winkelmann (1998), Hinks and Gruen (2006)

"Not too happy" = 1,
"Fairly happy" = 2, and
"Very happy" = 3

In substantive terms, the difference between 1 and 2 on the coded happy scale may be fairly different from the difference between 2 and 3. Analysing these polychotomous variables using least squares regression will lead to some problems including heteroskedasticity or predicted probabilities outside the unit interval (Jackman, 2000).

To avoid that, many studies applied an ordered probit for analysing happiness or subjective wellbeing model. The latent continuous variable[28], H_i^* (Happiness) is a linear combination of determinants of wellbeing, **X**, plus a disturbance term (ε) that has a standard normal distribution:

$$H_i^* = \mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i, \ \varepsilon_i \sim N(0, 1), \ i = 1, \ldots, N. \quad (1)$$

where **X** here excludes an intercept. As dependent variable crosses a series of increasing unknown thresholds we move up the ordering of alternatives (Cameron and Trivedi 2005, p. 519). For very low H^* self-reported happiness is low, for $H^* > \alpha_1$ self-reported happiness improves to fair, for $H^* > \alpha_2$ the self-reported wellbeing progresses further to very happy.

This model examines how changes in wellbeing determinants translate into the probability of observing a particular ordinal outcome[29]. In this study, the dependent variable, happiness takes on values 1 through 3 according to the following scheme.

Generally for an m-alternative ordered model, it is defined as

$$H_i = j \leftrightarrow \alpha_{j-1} < H_i^* \leq \alpha_j, \quad (2)$$

where $\alpha_0 = -\infty$ and $\alpha_m = \infty$ and here $j = 1, 2, 3$. Then

$$\Pr[H_i = j] = \Pr[\alpha_{j-1} < H_i^* \leq \alpha_j]$$
$$= \Pr[\alpha_{j-1} < \mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i \leq \alpha_j]$$

[28] The variable which is incompletely observed and can be introduced into binary, multinomial or censored outcomes.

[29] $\Pr[H_i = 1]$ represents the probability of "not too happy", $\Pr[H_i = 2]$ equals the probability of "fairly happy", and $\Pr[H_i = 3]$ is the probability of "very happy".

$$= \Pr[\alpha_{j-1} - \mathbf{X}_i'\boldsymbol{\beta} < \varepsilon_i \leq \alpha_j]$$
$$= \Pr[\alpha_{j-1} - \mathbf{X}_i'\boldsymbol{\beta} < \varepsilon_i \leq \alpha_j - \mathbf{X}_i'\boldsymbol{\beta}]$$
$$= \Phi(\alpha_j - \mathbf{X}_i'\boldsymbol{\beta}) - \Phi(\alpha_{j-1} - \mathbf{X}_i'\boldsymbol{\beta}) \quad (3)$$

where Φ is a standard normal cumulative distribution function (cdf) of ε_i.

$$\Pr[H_i = 1] = \Pr[-\infty < H_i^* \leq \alpha_1]$$
$$= \Pr[H_i^* \leq \alpha_1]$$
$$= \Pr[\mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i \leq \alpha_1]$$
$$= \Pr[\varepsilon_i \leq \alpha_1 - \mathbf{X}_i'\boldsymbol{\beta}]$$
$$= \Phi(\alpha_1 - \mathbf{X}_i'\boldsymbol{\beta}) \quad (4)$$

Then we can calculate the probability of the outcome for "Not too happy"

$$\Pr[H_i = 1] = \Phi[\alpha_1 - (X_1\beta_1 + X_2\beta_2 + \ldots + X_n\beta_n)]^{30} \quad (5)$$

In the case of "Fairly happy"

$$\Pr[H_i = 2] = \Pr[\alpha_1 < H_i^* \leq \alpha_2]$$
$$= \Pr[\alpha_1 < \mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i \leq \alpha_2]$$
$$= \Pr[\alpha_1 - \mathbf{X}_i'\boldsymbol{\beta} < \varepsilon_i \leq \alpha_2 - \mathbf{X}_i'\boldsymbol{\beta}]$$
$$= \Phi(\alpha_2 - \mathbf{X}_i'\boldsymbol{\beta}) - \Phi(\alpha_1 - \mathbf{X}_i'\boldsymbol{\beta})$$
$$\Pr[H_i = 2] = \Phi[\alpha_2 - (X_1\beta_1 + X_2\beta_2 + \ldots + X_n\beta_n)] - \Phi[\alpha_1 - (X_1\beta_1 + X_2\beta_2 + \ldots + X_n\beta_n)] \quad (6)$$

Also, the probability of "Very Happy" is

$$\Pr[H_i = 3] = 1 - \Phi(\alpha_2 - \mathbf{X}_i'\boldsymbol{\beta})$$
$$= 1 - \Phi[\alpha_2 - (\beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n)] \quad (7)$$

Although ordered probit is commonly used in the happiness literature, other alternatives are available. These include the order logit model. The choice of a probit or a logit specification is arbitrary and usually unimportant (Murray 2007, p. 829). Also, the logit and the probit functions have very similar shapes (See figure 5.3).

[30] By definition of inverse (if $\Phi^{-1}(x) = y$ then $x = \Phi(y)$) we can identify the equation as $\Phi^{-1}(P[H_i=1]) = \alpha_1 - (\beta_1 X_1 + \beta_2 X_2 + \ldots \beta_n X_n)$

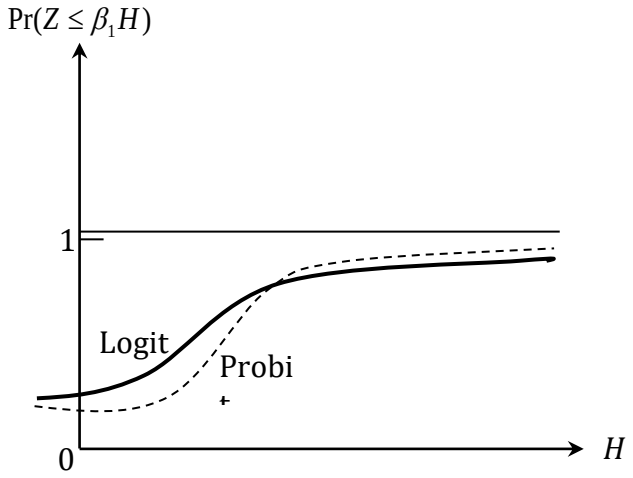


Figure 5.3 The probit and logit cumulative distribution functions

The difference between the probit and logit cumulative distribution functions, shown in figure 5.3, is that probability mass associated with the extreme values is higher for the case of logit model. From figure 5.3, both the logistic and the probit functions, $z = \beta_1 H$ represents the probability of being happy at that H. In the case of logistic model, the fatter tails bring an initially faster accumulation of observations than is the case for the probit one, and a slower convergence toward one. Murray (2007: 829) claimed that "Empirically, it is usually difficult to distinguish between the probit and logit models." In this research, both models will be utilised and the results compared for analysing the happiness determinants model and then the choice of the best fit model to the theoretical framework will be made.

5.4.3 Parameters and signs

The number of parameters in the ordered probit model can be computed by the number of regressors in a model excluding the intercept and the number of choices in the m-choice ordered model (Cameron and Trivedi, 2005. p. 520). We can define as

$$N = K + m - 1 \tag{8}$$

where N represents the number of parameters, letting K symbolise the number of regressors and m denotes number of choices for the latent variable in the ordered model.

To interpret whether or not the latent variable here H^* increases with the regressor, the sign of the regression parameters β can be derived for marginal effect in the probabilities

$$\frac{\partial \Pr[H_i=j]}{\partial \mathrm{X}_i} = \{\Phi'(\alpha_{j-1} - \mathrm{X}_i'\beta) - \Phi'(\alpha_j - \mathrm{X}_i'\beta)\}\beta, \tag{9}$$

where Φ' is the derivative of Φ. In this case the sign of $\alpha_{j-1} - \mathbf{X}_i'\boldsymbol{\beta}$ and $\alpha_j - \mathbf{X}_i'\boldsymbol{\beta}$ can be positive or negative.

5.4.4 Cutpoints or threshold parameters (ξ)

If ξ_1 and ξ_2 represent cutpoints of the model. The total probability of this model will be defined as

$$P_1 + P_2 + P_3 = 1 \tag{10}$$

where P_1, P_2, and P_3 define the probability of the outcome of self-reported happiness which are "not too happy", "fairly happy", and "very happy" respectively. Consider the probabilities of each ordinal outcome with two cutpoints ξ_1 and ξ_2:

$$\begin{aligned}
\Pr[H_i = 1] &= \Pr(\mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i < \xi_1) \\
&= \Pr(\varepsilon_i < \xi_1 - \mathbf{X}_i'\boldsymbol{\beta}) \\
&= \Phi(\xi_1 - \mathbf{X}_i'\boldsymbol{\beta}) \\
\Pr[H_i = 2] &= \Pr(\xi_1 < \mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i < \xi_2) \\
&= \Pr(\xi_1 - \mathbf{X}_i'\boldsymbol{\beta} < \varepsilon_i < \xi_2 - \mathbf{X}_i'\boldsymbol{\beta}) \\
&= \Phi(\xi_2 - \mathbf{X}_i'\beta) - \Phi(\xi_1 - \mathbf{X}_i'\boldsymbol{\beta}) \\
\Pr[H_i = 3] &= \Pr(\xi_2 < \mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i) \\
&= \Pr(\varepsilon_i > \xi_2 - \mathbf{X}_i'\beta) \\
&= 1 - \Phi(\xi_2 - \mathbf{X}_i'\boldsymbol{\beta})
\end{aligned}$$

The results of different models can be seen in table 5.8 and 5.9.

Table 5.8 Happiness model comparison

Variable	OLS	Ordered probit model		
		(1)	(2)	(3)
Male	-0.300	-0.074	-0.118	-0.122
	(-0.78)	(-0.54)	(-0.89)	(-0.92)
Y	0.00001*	0.382**	0.285**	0.284**
	(2.39)	(2.57)	(2.07)	(2.36)
Age	-0.021	-0.053	-0.069*	-0.067*
	(0-1.32)	(-1.29)	(-1.87)	(-1.80)
Age^2	0.0003	0.001	0.001**	0.0008**
	(1.55)	(1.52)	(2.09)	(2.03)
Edu1	0.1607	1.467**	0.651	0.637
	(1.27)	(0.034)	(1.35)	(1.32)
Edu2	0.1071	1.317*	0.431	0.423
	(0.85)	(0.059)	(0.87)	(0.86)
Edu3	0.213	1.466**	0.722	0.704
	(0.137)	(0.038)	(1.44)	(1.41)
Edu4	0.166	2.738***	1.756**	1.761**
	(1.27)	(0.002)	(2.47)	(2.49)
Health	-0.137*	-0.497***	-0.443***	-0.443***
	(-2.49)	(-2.94)	(-2.74)	(-2.74)
Famhealth	-0.129*	-0.450**	-0.476***	-0.479***
	(-2.30)	(-2.50)	(-2.74)	(-2.76)
Mar=2	0.226*	0.824**	0.882***	0.876***
	(2.17)	(2.57)	(2.80)	(2.78)
Mar=3	0.257	1.055**	1.027**	1.014**
	(1.66)	(2.30)	(2.38)	(2.35)
Mar=4	0.441	1.827*	1.513	1.494
	(1.29)	(1.89)	(1.53)	(1.51)
ln_exp	0.085	0.328*	0.365**	0.409***
	(1.57)	(1.88)	(2.33)	(2.82)
Saving	0.002***	0.006***	0.006***	0.006***
	(2.61)	(2.64)	(2.84)	(2.91)
L_debt	-0.109	-0.931†	-0.592**	-0.611***
	(-1.62)	(-3.75)	(-2.58)	(-2.67)
Amount	-0.00001†	-0.00003†	-0.00003†	-0.00003†
	(-5.51)	(-5.02)	(-4.90)	(-4.87)
Rural	0.543†	1.503†	1.586†	1.581†
	(5.45)	(5.21)	(5.67)	(5.66)
PA	0.061*	0.135	0.197**	1.961**
	(2.09)	(1.49)	(2.23)	(2.23)
NA	-0.37	-0.133	-0.097	-0.091
	(-1.20)	(-1.62)	(-1.22)	(-1.14)
SWB	0.059	0.316†	0.226***	0.229***
	(1.95)	(3.93)	(2.97)	(3.01)
Repay=2	0.0111	-0.064	-0.024	-0.027
	(0.24)	(-0.33)	(-0.12)	(-0.14)
Repay=3	0.290	0.906***	0.797***	0.794***
	(0.47)	(3.11)	(2.79)	(2.78)
Log likelihood	R^2 = 0.482	-248.459	-268.077	-267.419
McFadden's R^2		0.397	0.369	0.370
ξ_1		8.285	6.991	7.176
ξ_2		11.423	9.975	10.166

Table 5.9 Semi-nonparametric models of happiness with robust test

Variable	SNP(3)			SNP(5)		
	(7a)	(8a)	(9a)	(7b)	(8b)	(9b)
Male	-0.080	-0.102	-0.091	-0.132	-0.094	-0.086
	(-0.58)	(-0.90)	(-0.85)	(-1.13)	(-0.94)	(-0.91)
Y	0.355*	0.552†	0.506†	0.420†	0.517†	0.474†
	(1.94)	(0.552)	(4.42)	(3.87)	(4.70)	(4.82)
Age	-0.074	-0.117***	-0.111***	-0.092**	-0.101***	-0.096***
	(-1.58)	(-3.12)	(-2.84)	(-2.59)	(-3.05)	(-2.68)
Age^2	0.0009*	0.001***	0.001***	0.001***	0.001***	0.001***
	(1.74)	(3.47)	(3.24)	(2.79)	(3.44)	(3.12)
Edu1	1.247†	0.521*	0.486	1.173†	0.480*	0.449
	(3.67)	(1.83)	(1.63)	(3.58)	(1.87)	(1.64)
Edu2	1.095***	0.327	0.287	1.074***	0.305	0.272
	(3.09)	(1.06)	(0.88)	(3.33)	(1.12)	(0.94)
Edu3	1.285†	0.472	0.460	1.198†	0.441	0.428
	(3.57)	(1.54)	(1.45)	(3.61)	(1.59)	(1.50)
Edu4	2.216†	1.278***	1.320***	2.153†	1.181***	1.218***
	(4.68)	(3.21)	(3.14)	(4.65)	(3.33)	(3.25)
Health	-0.610***	-0.588***	-0.606†	-0.431*	-0.521***	-0.535†
	(-3.38)	(-3.22)	(-3.60)	(-1.79)	(-3.41)	(-3.70)
Famhealth	-0.312	-0.268	0.268	-0.260	-0.236	-0.240
	(-1.31)	(-1.38)	(-1.34)	(-1.36)	(-1.42)	(-1.33)
Mar=2	0.947**	0.876**	0.902***	0.667**	0.780**	0.817***
	(2.17)	(2.01)	(3.01)	(2.19)	(2.38)	(3.17)
Mar=3	0.985*	0.902*	0.926**	0.693*	0.836**	0.847***
	(1.68)	(1.74)	(2.37)	(1.91)	(2.14)	(2.62)
Mar=4	1.484**	1.373**	1.366***	1.376***	1.281***	1.269***
	(2.13)	(2.38)	(2.68)	(2.74)	(2.63)	(2.82)
ln_exp	0.331*	0.277*	0.369***	0.402***	0.258*	0.348***
	(1.65)	(1.82)	(2.86)	(2.82)	(1.96)	(3.11)
Saving	0.005	0.008†	0.008†	0.007†	0.007†	0.007†
	(1.58)	(4.63)	(5.89)	(4.42)	(5.39)	(6.31)
L_debt	-0.965*	-0.762*	-0.707*	-0.901***	-0.661*	-0.621*
	(-1.92)	(-1.92)	(-1.83)	(-3.25)	(5.39)	(-1.37)
Amount	-0.00003†	-0.00003†	-0.00003†	-0.00003†	-0.00003†	-0.00003†
	(-4.16)	(-6.31)	(-6.79)	(-6.35)	(-6.15)	(-6.62)
Rural	1.517†	1.624†	1.621†	1.628†	1.487†	1.486†
	(5.36)	(7.16)	(6.85)	(7.80)	(7.36)	(6.67)
PA	0.205*	0.175***	0.161***	0.120*	0.151***	0.142***
	(1.83)	(2.65)	(2.73)	(1.67)	(2.79)	(2.76)
NA	-0.097	-0.161*	-0.151	-0.142	-0.148	-0.140
	(-1.01)	(-1.71)	(-1.52)	(-1.47)	(-1.65)	(-1.41)
SWB	0.272***	0.204***	0.218***	0.277†	0.187†	0.1986†
	(2.61)	(3.08)	(3.48)	(4.19)	(3.53)	(3.78)
Repay=2	0.115	0.009	-0.004	0.109	-0.017	-0.0286
	(0.61)	(0.05)	(-0.02)	(0.61)	(-0.11)	(-0.16)
Repay=3	0.886***	0.701***	0.679***	0.888***	0.614***	0.592***
	(3.16)	(3.19)	(3.07)	(3.45)	(3.07)	(2.85)
Log likelihood	-228.270	-234.865	-234.478	-221.012	-234.103	-233.689

Note: *, **, ***, † represent significance at the level of 90%, 95% and 99% and 99.99% respectively.

In table 5.8, all models employ an ordered probit design using personal income (model 1), household income (model 2) and equivalent household income (model

3). In table 5.9, all models used semi-nonparametric ordered probit models which was an extension of ordered probit model. It relaxes the distributional assumption in the model. The results were produced using OLS and ordered probit and semi-nonparametric ordered probit and the results compared.

Ordered probit model was employed for this analysis as the dependent variable, self-reported happiness, is ordered. Using OLS will then violate the good or unbiased and efficient (BLUE), estimate assumptions of OLS. According to the results from table 5.8 and 5.9, it is different from OLS results. Thus, the ordered probit is more appropriate in the case of this categorical dependent variable model.

From the results, it was found that other factors seem to have influence on one's happiness level. For example, health, which here is measured by two proxy variables: heath condition of respondents and health status of their family members. It was found that health had significant influence on self-reported happiness in all models.

Age and happiness connections were another result found in this study. Empirically, there is some evidence of a dissonance between psychologists and economists about the relationship between age and happiness. On the one hand, economists are likely to believe in the occurrence of a U-shaped pattern. One example of an empirical study based on Swedish micro data confirmed the relationship between age and happiness was in a U-shaped form with happiness being lowest in the age group 45 to 64 years old (Gerdtham and Johannesson, 1997. p 16). Other empirical economic research, controlling the influence of other related factors such as income, education, and health, also confirmed the U-shaped relationship between age and happiness which individuals facing the lowest level of happiness in middle age (Example empirical studies including Oswald, 1997; Winkelmann and Winkelmann 1998; Blanchflower and Oswald 2004, 2008; Clark et al., 2005; Lelkes, 2006, 2008; Clark and Oswald, 2007).

On the other hand, recent empirical studies from school of psychology indicate that life satisfaction, over the life cycle, changed little or not at all on the whole (Lucas and Gohm, 2000, pp. 296-297). Additionally a robust result of Mroczek and Kolarz (1998); Mroczek and Spiro (2005) indicated a curvilinear relationship in an inverted

U-shaped curve between age and happiness with the summit at age 65 and then a decline. However, the results of Libong dataset, supports the economics literature. With triangulation this result to the ethnographic result, in-depth interviews and focus group discussion. It is found that the perspective of happiness of the elderly relates to respectfulness from neighbours, the enjoyment in retirement and the acceptance in the simplest life circumstances. As a result, the elderly tend to be happier than middle age. Some studies in Thailand also corroborate this result. For example, Ingersoll-Dayton et al. (2001, p. 283-302) found that the Thai elderly perspective on wellbeing relates to five dimensions: harmony, interdependence, acceptance, respect, and enjoyment. In addition, in some case studies, middle aged household heads with responsible for their family reported a low level of happiness.

5.5 Conclusion

This chapter explores how Libong villagers conceptualise happiness and wellbeing. Also, this chapter empirically showed that income had an influence on happiness but that the link was very weak. This led to the primary conclusion that income did not solely influence happiness and wellbeing. Other factors then were added into the estimated equations and provided empirical results for the determinants of happiness. By using different measures of happiness and wellbeing including a single-item self-reported happiness and life satisfaction, positive and negative affects, the findings supports the conclusions of many previous studies reporting a low correlation between income and happiness or subjective wellbeing. Other factors such as health status and family member's health condition have a significant effect on one's happiness and wellbeing. Financial condition and loan variables including household expenditure, amount of saving per month, amount of loan, loans for paying debt purpose and repayment difficulty also have an important impact on self-reported happiness and subjective wellbeing scores.

Chapter 6
The Impact of Microfinance on Happiness and Wellbeing

6.1 Introduction

It is claimed that microfinance is a powerful tool by itself or even better when it is utilised in conjunction with other social and economic development tools. The quote below from a non-profit organisation called 'Worldrelief' asserted the benefits of a microfinance programme from increasing an individual's self-esteem to fostering community wellbeing.

> *"The world of microfinance opens the door of opportunity for the poor – providing the dignity and satisfaction that comes from working to support one's family. Microfinance is about much more than just money. It helps create stability at home, teaches individuals how to thrive, and fosters self-respect and community wellbeing. Once empowered, men and women are able to support their families for a lifetime – not just a few days or weeks. It's the difference between a hand up and a handout." (Worldrelief, 2009)*

In the previous chapter, the concepts of happiness and wellbeing were introduced. The happiness and wellbeing models were analysed, providing some general concepts of happiness determinants. The relationship between income and happiness has been revised and Easterlin's paradox has been re-examined and discussed. This chapter aims to extend the analysis and will examine the impact of microfinance programmes on happiness and wellbeing, using the case of rural Thailand. Two microfinance schemes and informal loans in Libong community were employed for impact analysis of within communities.

This chapter begins with the introduction to the dataset and variables used for empirical analysis. Then loan culture in Libong community including loan amount, saving behaviour and loan use behaviour are introduced. It depicts the general features of the local credit system and how villagers save and access loans. There are two existing microfinance schemes, the National and Village and Urban Community Fund or in short the village fund (NVUCF) and the Libong savings group

fund (LSGF) used in order to compare microfinance impacts on their clients' happiness and wellbeing. Both schemes were compared to local informal loans.

To measure microfinance impact, there are three levels of impact which are individual, household and community level. Moreover, different proxy variables were employed for microfinance impact analysis. Subjective wellbeing impacts were measured by self-reported happiness and life satisfaction indices in the cognitive aspect on the one hand; positive and negative affects indices in the affective aspect on the other. Comparing different microfinance scheme participants with non-participants, using different methods, finally provides rigorous explanation of how much the loans help improve borrowers' wellbeing, families' quality of life, and community improvement.

6.2 Data description and methods

In this chapter, the data used are focused on loans and its impacts which were collated from household survey, focus group discussion and in-depth interviews.

6.2.1 Data and variables

This chapter focuses on the impact of microfinance on happiness and wellbeing. Thus, all dataset and variables used in this chapter are related to borrowing and saving behaviours, and the impacts of the loans on happiness and wellbeing. The details of variables used in each section is provided as follows:

1) Borrowing, saving and loan use

Before examining the impact of the loans on happiness and wellbeing, the loan culture of the research site from three main sources of loans, which are the village fund (NVUCF), the savings group fund (LSGF) and informal loans (BD), are explained and discussed. Firstly, some variables related to borrowing and saving behaviour and loan use variable are investigated. Some descriptive statistics of those variables are shown in the following table.

Table 6.1 Loan amount, saving and use of loan

Variable	N	$\overline{X}$ / %	STDV	MIN	MAX
1. Loan amount (Q)	509	17,900.75	11,446.6	2,000	90,00
- Less than or equal to 10,000 Baht	126	24.8%	0		0
- 10,001 to 15,000 Baht	133	26.1%			
- 15,001 to 20,000 Baht	182	35.8%			
- More than 20,000 Baht	68	13.4%			
2. Monthly saving (S)	509	16.21	34.76	2.33	55.00
- Never or cannot save	382	75.05%			
- No promissory monthly saving	7	1.37%			
- With promissory monthly saving	120	23.58%			
3. Key use of loan	509	100.00%	NC	1	4
- Family business expenditure (ω_1)	202	39.68%			
- Essential household expenditure (ω_2)	233	45.78%			
- Purchase of luxury goods (ω_3)	4	0.79%			
- Debt repayment (ω_4)	70	13.75%			
4. Use of loan	509	100.00%	NC	1	8
- Investment in a new family business (ν_1)	38	7.46%			
- Purchase of new equipment and tools (ν_2)	164	32.22%			
- House repair (ν_3)	36	7.07%			
- Payment of school fees (ν_4)	11	2.16%			
- Purchase of medicines (ν_5)	1	0.20%			
- Purchase of food and clothing (ν_6)	185	36.35%			
- Purchase of luxury goods (ν_7)	4	0.79%			
- Debt repayment (ν_8)	70	13.75%			

Note: NC = Not comparable due to nominal scale measure

Table 6.1 shows the loan amount, monthly saving, and the use of loan in Libong community. It was found that the average loan amount from the total sample was approximately 17,900.75 Baht. Regarding the average monthly saving, it was found that the saving per month was quite low at just 16.21 Baht or approximately 3 pence per month. It was also found that three quarters of the sample had no monthly savings. Nearly a quarter of samples had promissory monthly savings, which they saved with the group they belonged to.

Loans were mainly used for essential household spending and for the family business. Less than 15 percent of the borrowers used their loans for debt repayment and less than one percent spent the loans on purchasing luxury goods. By looking at the use of loans in more detail, it was found that most of the borrowers used their loans for purchasing new equipment and tools for their business, and for food and clothing in the case of household expenditure. In terms of investment purpose, 32.22

percent used the loans for purchasing tools and equipment while 7.46 percent used the loans for new family business investment.

2) Units of microfinance impact assessment

In order to assess the impact of microfinance intervention, it is important to determine what its key units or levels of assessment are. Being clear in the units of assessment can help to focus studies and concentrate resources, as well as helping to understand important linkages between these levels (Roche 2005). According to other microfinance impact studies, each case emphasised a different unit of impact level. The following table compares the differences between case studies in unit of impact level identification.

Table 6.2 Comparison of units of microfinance impact assessment

Case studies	Main units of impact level	Secondary impact level
BRAC, Bangladesh	Individuals, households, groups	Villages
CORDES, El Salvador	Individuals, households, community	Community-based organisations (CBOs)
CYSD, Orissa, India	Individuals, households, support NGOs	CBOs
ENDA, Zimbabwe	Individuals, communities	Households, institutions
GSS, Bangladesh	Groups, support NGOs	Individuals, federated structures
Matson, UK	Individuals	Organisations
NK, Bangladesh	Groups, support NGOs	Individuals, federated structures
Oxfam GB, Ghana	Individuals, support NGOs	Households, communities
Oxfam GB in Ikafe, Uganda	Individuals, communities	Households, institutions
Oxfam GB, Pakistan	Individuals	Organisations
PROSHIKA, Bangladesh	Individuals, households, groups	Villages
Wajir, Kenya	Individuals, households	CBOs, support NGOs, institutions

In the present study, units of microfinance impact are categorised into three levels, which are individual, household and community and environmental. There are 20 indicators measuring the impacts of the loans in terms of discrepancy between before and after individuals receiving loans. Participants were asked how the loans affected their activities and personal wellbeing, their family circumstances and some changes in their community. Then they had to score the change in each

category by comparing their circumstances before and after receiving the loans (-2 = “Decrease greatly” or “Noticeably worse”, -1 = “Decrease some” or “Worse”, 0 = “Stay the same”, +1 = “Increase some” or “Better”, +2 = “Increase greatly” or “A lot better”). Some descriptive statistics of the impact score are shown in the following table.

Table 6.3 Units of microfinance impact

Units of microfinance impact	N	$\overline{X}$	STDV	MIN	MAX
Individual level					
1. Income (IMP_1)	509	0.33	0.630	-1	2
2. Business profit (IMP_2)	509	0.28	0.521	0	2
3. Liquidity (IMP_3)	509	0.29	0.671	-2	2
4. Personal savings (IMP_4)	509	0.28	0.652	-1	2
5. Personal asset (IMP_5)	509	0.19	0.451	-1	1
8. Knowledge (IMP_6)	509	0.32	0.639	0	2
6. Self-esteem (IMP_7)	509	0.26	0.803	-2	2
7. Neighbour’s relationship (IMP_8)	509	0.35	0.626	-1	2
Household level					
9. Household income (IMP_9)	509	0.51	0.698	0	2
10. Household saving (IMP_{10})	509	0.27	0.659	-1	2
11. Household asset (IMP_{11})	509	0.21	0.597	-2	2
12. Household debts (IMP_{12})	509	0.00	0.658	-2	2
13. Household consumption (IMP_{13})	509	0.50	0.535	-1	1
14. Housing condition (IMP_{14})	509	0.22	0.471	0	2
13. Health and nutrition (IMP_{15})	509	0.37	0.560	0	2
11. Children’s education (IMP_{16})	509	0.38	0.643	0	2
Community level					
17. Community relationship (IMP_{17})	509	-0.10	0.660	-2	1
18. Village activity participation (IMP_{18})	509	0.30	0.724	-1	2
19. Village development (IMP_{19})	509	0.13	0.471	-1	1
20. Environmental development (IMP_{20})	509	0.34	0.751	-1	2

Table 6.3 shows descriptive statistics of microfinance impact. In this study, the unit of impact assessment is divided into three levels. Firstly, the individual level, respondents reported a high level of impact for the relationship to their neighbours, income change and the impact to their knowledge. Secondly, it was found that the loan mostly affected borrowers’ household income and consumption and children’s education most with respect to all household impact indicators. Finally, regarding the impact of the loan on the change in community, it was reported by research participants that the area that was most affected was the environment development and village activity participation. Interestingly, the impact on community relationship was found to be negative as a result of the loan as it created conflict

between borrowers and lenders. This result will be further discussed in this chapter. The impact indicators then will be transformed to composite indices as show the following table.

Table 6.4 Units of microfinance impact and composite index

Units of microfinance impact	$\overline{X}$	STDV	Composite index
Individual level			
1. Income	0.33	0.630	Individual Impact Index† (III)
2. Business profit	0.28	0.521	
3. Liquidity	0.29	0.671	
4. Personal savings	0.28	0.652	
5. Personal assets	0.19	0.451	
6. Knowledge	0.32	0.639	
7. Self-esteem	0.26	0.803	
8. Neighbour's relationship	0.35	0.626	
Household impact			
9. Household income	0.51	0.698	Household Impact Index† (HII)
10. Household savings	0.27	0.659	
11. Household assets	0.21	0.597	
12. Household debts	0.00	0.658	
13. Household consumption	0.50	0.535	
14. Housing condition	0.22	0.471	
15. Health and nutrition	0.37	0.560	
16. Children's education	0.38	0.643	
Community impact			
17. Community relationships	-0.10	0.660	Community Impact Index† (CII)
18. Village activity participation	0.30	0.724	
19. Village development	0.13	0.471	
20. Environmental development	0.34	0.751	

† These composite indices were created using Principal Component Analysis (PCA).

3) Happiness and wellbeing

Another important outcome variable for assessing the impact of microfinance participation is happiness and wellbeing. Self-reported happiness is used for measuring personal happiness level as mentioned earlier in chapter five.

To estimate the impact of the loans on subjective wellbeing, affective component of subjective wellbeing indicators were used in this study. According to previous studies, different types of existing measures has been used and developed in order to measure subjective wellbeing. Positive affect and negative affect has been proved

by previous research that these two independent factors contain dimensions of emotional experience (Emmons and Diener, 1984; Russell, 1980, 1983; Watson, Clark, and Tellegen 1984; Watson and Tellegen 1985; Zevon and Tellegen 1982).

According to Watson (1988) one's level of pleasurable engagement with the environment is known as positive affect. This factor includes terms such as excited, enthusiastic, active, alert, attentive, strong or determined. On the contrary, a general factor of subjective distress and subsumes a broad range of aversive mood states, including feeling distressed, nervous, afraid, angry, guilty and scornful is called negative affect (Watson 1988, p. 1020).

In order to measure the impact of the loan to subjective wellbeing, this study utilised indicators which are able to identify magnitude of positive and negative affects or feelings of borrowers after receiving the loan. These indicators are called 'Positive and Negative Affect Schedule' or 'PANAS'. Twenty frequency scale indicators showing the recurrence of positive and negative moods are collated and created composite indices as shown in table 6.5.

According to descriptive statistics shown in table 6.5, there are two dimensions of subjective wellbeing. The first one is positive affect index (PAI) which was a composite index by condensing ten positive feeling indicators. By contrast, the second index, negative affect index (NAI), represents negative or unpleasant feelings, comprising of ten indicators shown in the table. These 20 indicators indicate the magnitude of each mood or feeling after respondents received the loan. Respondents were interviewed and discussed their experience after receiving the loan and how often those positive and negative feelings occur as a consequence of the loan or how much the loan affected their emotional states. Then, they were asked to rate the PANAS indicators from a five scale level (1 = Rarely or never, 2 = Few times, 3 = Sometimes, 4 = Often, 5 = Very often).

Table 6.5 Descriptive statistics of the positive and negative affect schedule (PANAS)

PANAS	N	$\overline{X}$	S.D.	MIN	MAX	Composite index
Positive affect (PA)						
Active	509	2.33	1.646	1	5	Positive Affect Index† (PAI)
Alert	509	2.26	1.662	1	5	
Attentive	509	2.17	1.468	1	5	
Determined	509	2.11	1.485	1	5	
Enthusiastic	509	2.11	1.479	1	5	
Excited	509	1.60	0.938	1	5	
Inspired	509	2.23	1.693	1	5	
Interested	509	1.72	1.053	1	5	
Proud	509	2.14	1.447	1	5	
Strong	509	2.19	1.392	1	5	
Negative affect (NA)						
Ashamed	509	1.47	1.166	1	5	Negative Affect Index† (NAI)
Afraid	509	1.61	1.288	1	5	
Distressed	509	1.33	0.849	1	5	
Guilty	509	1.28	0.858	1	5	
Hostile	509	1.58	1.228	1	5	
Irritated	509	1.48	1.168	1	5	
Stressed	509	1.68	1.330	1	5	
Nervous	509	1.67	1.302	1	5	
Scared	509	1.59	1.290	1	5	
Upset	509	1.39	1.003	1	5	
						Psychological Wellbeing Index† (PWI)

† These composite indices were created using Principal Component Analysis (PCA).

An initial principal component analysis was conducted. Two criteria, Barlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, were taken into consideration to examine the adequacy of the data and sample size for the analyses. The KMO measure indicates the proportion of variance in a set of variables that may be caused by underlying factors. High values (close to 1.0) generally indicate that a factor analysis may be useful with a data set. A value of less than 0.50 indicates that the results of the factor analysis probably will be of limited use. Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, indicating that the variables are unrelated and therefore unsuitable for structure detection. A significant value indicates that a factor analysis is useful with the data. The results of factor analysis and the test for sampling adequacy and reliability test are shown in table 6.6.

PAI and NAI are for constructing a psychological wellbeing index (PWI) representing the total subjective wellbeing in the affective dimension. The Positive and Negative Affect Scale or PANAS (Watson et al., 1988) includes 20 items half of which describe negative affective states and half positive, which are endorsed on a Likert-like scale. It yields two subscales, one of negative affect and one of positive affect. Scale reliability estimates are 0.79 and 0.832 respectively.

Life satisfaction is another outcome variable for measuring subjective well-being. It was used for measuring the cognitive construct of subjective wellbeing. Scale reliability for this index equals to 0.842.

Table 6.6 Reliability and sampling adequacy test for outcome composite indices

Impact index	N	Cronbach's alpha	Barlett's test	KMO
III	509	0.880	1966.09***	0.883
HII	509	0.790	1152.03***	0.816
CII	509	0.768	638.98***	0.723
PAI	509	0.965	6209.71***	0.936
NAI	509	0.856	3902.73***	0.865
PWI	509	0.832	10613.11***	0.898
LS	509	0.842	1166.07***	0.764

The Cronbach's alpha test in table 6.6 confirmed that all indicators were reliable in measuring microfinance impact with the high value of alpha score. Considering the appropriateness of factor analysis, both Barlett's test and the KMO statistics showed significant and high values. This indicated that the factor analysis was acceptable for the data.

6.2.2 Correlation analysis

To identify the association between borrowers' characteristics and source of loan, first some correlation coefficients are used for this purpose. With nominal scale variables, the main statistics is Chi-square test (χ^2) which is a common coefficient for measuring association between categorical variable. The Chi-square test can be computed by

$$\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}$$

where χ^2 = Pearson's chi-squared test
O_i = an observed frequency
E_i = an expected frequency
n = number of cells in the table

Alternative statistics are used for comparing the results with the Chi-square including Lambda statistics (λ) and Goodman and Kruskal's tau statistics (τ). The significance of these statistics can only confirm the existence of the association. However, to determine the magnitude of the correlation, the Cramer's V statistics (V_c) is employed. The Cramer's V can be derived from

$$V_c = \sqrt{\frac{\varphi^2}{(k-1)}} = \sqrt{\frac{\chi^2}{N(k-1)}}$$

where $\varphi^2 = \frac{\chi^2}{n}$

χ^2 = Pearson's chi-squared test
n = Total number of observations

In some cases, some variables are measured in the ordinal scale. The proper coefficient used for correlation analysis is the Spearman's rank correlation coefficient (ρ). This statistics can be computed from

$$r_{Sxy} = \frac{12\sum(q_{ix}-\mu_{qx})(q_{iy}-\mu_{qy})}{n^3-n}$$

By noting that $\mu_{qx} = \mu_{qy} = \frac{1}{2}(n+1)$, the formula could be further simplified to

$$r_S = \rho = 1 - \frac{6\sum(q_{ix} - q_{iy})^2}{n^3-n}$$

6.2.3 Comparison analysis

To estimate the differences of outcome indicators between groups, various statistical methods for comparison can be used for this study. However, the basic statistical methods for comparison analysis selected for this study include the analysis of variance or ANOVA and the independent sampled t-test. Regarding ANOVA, in the process of multiple comparisons, here two methods were applied, Bonferroni in the case of equal variance and the Tamhane procedure in the case of unequal variance.

However if there is a violation of the assumption of homogeneity of variances, to determine whether there were significant differences between the groups can be performed by not using the traditional ANOVA but using the Welch and the Brown-Forsythe test instead. Like the ANOVA test, if the significance value is less than 0.05 then there are statistically significant differences between groups.

The Brown–Forsythe test is a statistical test for the equality of group variances based on performing an ANOVA on a transformation of the response variable. The Brown-Forsythe test statistics is the F statistics resulting from an ordinary one-way analysis of variance on the absolute deviations from the median. The transformed response variable is constructed to measure the spread in each group.

Let $z_{ij} = \left| y_{ij} - \tilde{y}_j \right|$

where $\tilde{y}_j$ is the median of group *j*. The Brown–Forsythe test statistic is the model *F* statistic from a one way ANOVA on z_{ij}:

$$F = \frac{(N-p)}{(p-1)} \frac{\sum_{j=1}^{p} n_j (z_{.j} - z_{..})^2}{\sum_{j=1}^{p} \sum_{i=1}^{n_j} (z_{ij} - z_{.j})^2}$$

where *p* is the number of groups, n_j is the number of observations in group *j*, and *N* is the total number of observations.

6.3 Microfinance impact analysis

There is an attempt to assess the impact of microfinance as measured by different levels of the impact including the impact on clients, their enterprises, households, and the communities in which they live (Brau and Woller, 2004: 26). With regard to the definition of the OECD/DAC (The OECD Development Assistance Committee), impact is a "positive and negative, primary and secondary, long-term effects produced by a development intervention, directly or indirectly, intended or unintended."

UNDCF (2003) also defines impact as:

> *"The overall and long-term effect of an intervention. Results from a programme or project that are assessed with reference to the development objectives or long-term goals of that programme or project; changes in a situation, whether planned or unplanned, positive or negative, that a programme or project helps to bring about. Impact is the longer term or ultimate result attributable to a development intervention, in contrast with output and outcome, which reflect more immediate results from the intervention. The concept of impact is close to development effectiveness" (UNDCF, 2003, p. 10).*

Following the definition above, accompanied by previous impact assessment studies, it is not straightforward to estimate an impeccable impact of a single economic and social intervention programme. Rigorous and plausible research methodologies are required in order to untangle specific programme effects out of complicated interwoven threads of causal and mediating factors, which constrain opportunities for change, but are not directly linked to the programme intervention such as gender of client, household composition, and price of input. Also, a preferable impact assessment method has to be adequately powerful to isolate the programme impacts out of high decibels of random environmental noise or external factors such as clients' activities or macroeconomic conditions.

Generally, the two main concepts of microfinance impact assessment are firstly to evaluate the changes that occur in clients' lives, their enterprises, their families or households, and their communities; and secondly the extent to which the identified changes are related to clients' participation in the microfinance programme (Nelson et al, 2004: 1-5). Rossi and Freeman (1989) claimed that to ascertain impact essentially is making a credible case that the programme led to the observed or stated changes which are more possibly to occur with programme participation than without programme participation. It does not imply that the changes always occur from programme participation. Rather, establishing impact increases the probability that the changes will occur as a result of programme participation. The main difficulty is the type of change that researchers are looking for can occur for multiple reasons which are not related to programme interventions.

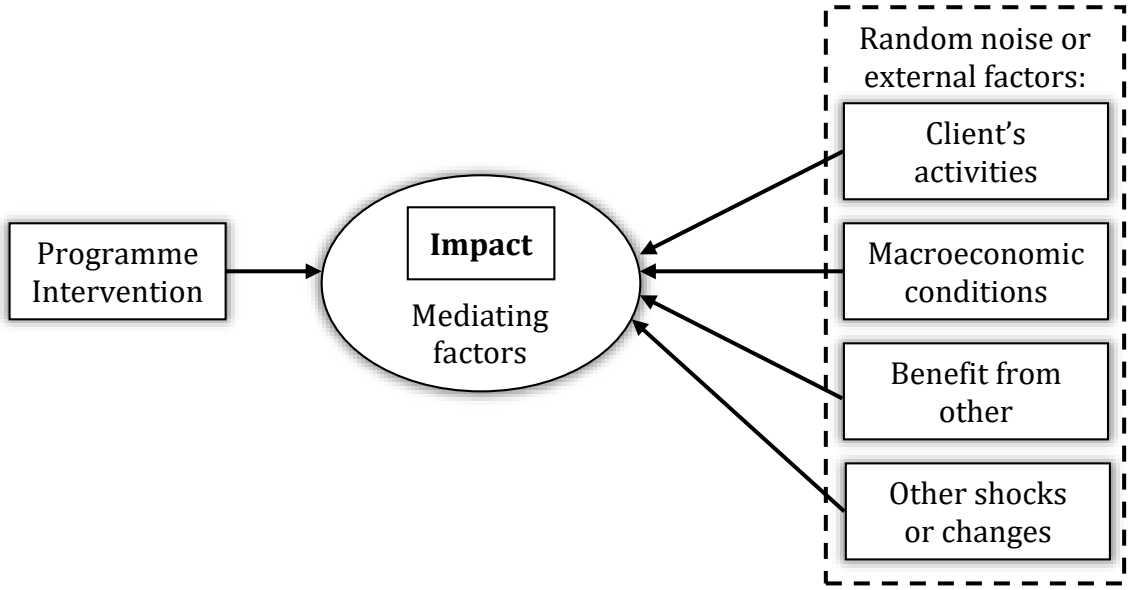


Figure 6.1 Programme impact with random noise

Figure 6.1 illustrates a simple model of impact assessment showing that there are multiple external factors influencing programme impact. In order to extract the programme impact out of these noises, several methods are adopted in previous research which is discussed in the next section.

6.3.1 A scientific method versus practitioners' tools

There are different types of microfinance impact assessments from both academician and practitioners. In developing countries, the impact of microfinance focused on socioeconomic impact. It attempts to answer whether microfinance effectively support the business of the poor or whether it can reduce poverty. Many previous impact studies aim to improving impact and try to reduce the cost of impact assessment by using more cost-effective qualitative assessment instead of an expensive quantitative approaches. Another way of impact assessment is trying to understand clients' behaviour or measuring social impact and client satisfaction such as work of PlaNet Finance, CGAP Working Group, and the SEEP network (Verhagen, 2001).

Alternatively, most existing studies did not follow randomised approaches. In Thailand, Coleman (1999, 2006) gathered information of microfinance's clients using before they join the microfinance programme and evaluated the impact using difference-in-difference approach between with and without programme intervention areas. Karlan (2000) replicated Coleman's approach in Peru and used

new borrowers as a control group. A study of Barnes, Keogh, and Nemarundwe (2001) attempted to get rid of biases using longitudinal data in India, Peru and Zimbabwe. Using instrumental variables (Angrist and Pischke, 2009) or using cross-section dataset (Khandker, 1998) or full panel data analysis (Khandker, 2005) are possible options for impact assessment.

Randomised control trials (RCTs) has been one of a popular approach which was claimed to solve most difficult statistical dilemma of the impact assessment. It was employed by many researchers such as a study of Karland and Zinman (2010) on consumer finance in South Africa and microfinance in the Philippines, and a study of Banerjee et al. (2009) was the first large scale randomised experiment in Hyderabad, India, a study measuring returns to capital in Sri Lanka (Mel, Mckenzie, and Woodruff, 2008).

To answer the question "how can programme impact be assessed?", there are historically two viewpoints of justification, depending on the objectives of study and the main audience who obtains benefits from the research results. One is proving which attempt to evaluate as accurately as possible the observed impact of an intervention. Another is improving practice objectives, which measure the impact for understanding the processes of intervention and their impacts so as to improve those processes.

As can be seen, proving impact objectives is normally important for academics and researchers, policymakers or programme managers while practitioners, donor staff or intended beneficiaries are interested in improving practice. These two main angles will lead to differences in impact assessment methodology.

Theoretically, there are three broad approaches to impact assessment, each having its own merits and weaknesses (Hulme, 2000). The impact assessment approaches including a quantitative or "scientific" statistical method (principally control-group surveys), a qualitative method (mainly ethnography and other qualitative methods), and a participatory learning and action method (participatory qualitative tools that include, for example, participatory rural appraisal, rapid rural appraisal, and farming systems research). It can be concluded that an optimal impact assessment

mechanism should be a mix of the different methods for a fit between assessment objectives, program context, human resources, and timing. Thus, this study combines both some conventional and some advanced quantitative approaches with a mixture of qualitative methods in order to obtain a genuine and rich information, rigorous data analysis and cost-effectiveness benefit.

6.3.2 Neyman-Rubin framework and the treatment effect estimation

In statistics, the counterfactual framework or the Neyman-Rubin counterfactual framework of causality was developed by Neyman (1923) and Rubin (1974, 1978, 1980b, 1986). This model has been applied by statisticians including Fisher (1935, 1971), Cox (1958), Holland (1986). In other disciplines, it was applied by several scholars such as Thurstone (1930) from psychometrics, Haavelmo (1943), Roy (1951), and Quandt (1958, 1972), Abadie and Imbens (2006); Galiani, Gertler, and Schargrodsky (2005), Dehejia and Wahba (1999, 2002) from economics; Sekhon (2004b) Browers and Hansen (2005, 2013), Imai (2005) from Political science; Smith (1997), Winship and Morgan (1999), Diprete and Engelhardt (2004), Morgan and Harding (2006) from Sociology; and Rubin (2001) has used this model in Law. Holland (1986), Sobel (1996), and Winship and Morgan (1999) have provided detailed reviews of the history and development of the counterfactual framework.

However, when treatment assignment cannot be ignored, the OLS regression estimate of treatment effect is biased and inconsistent. If the main predictors are omitted and there is a problem of selection bias, especially in an observational study for programme evaluation, the situation is made worse. New models have been designed for non-experimental approaches. In this study, which is not a fully randomised experimental design, the OLS regression estimate of treatment effect is not appropriate. Other methods are needed in order to solve this problem. Newly developed methods attempt to relax the assumption of the non-ignorable treatment assignment by considering estimation and inference that does not rely on strong assumptions requiring distributional and functional forms. These models help rebalance assigned conditions so that they become akin to data generated by randomisation. Finally, counterfactuals that represent different treatment effects of interest can be estimated by employing statistics such as means or proportions. The existing models for estimating counterfactuals are shown in the table below.

Table 6.7 Core features of different methods

Model	Key contributor
1. Heckman's sample selection model 1.1 The revised version estimating treatment effects	Heckman (1978, 1979) Maddala (1983)
2. The propensity score matching model	Rosenbaum and Rubin (1983)
3. Matching estimators	Abadie and Imbens (2002, 2006)
4. Propensity score analysis with nonparametric regression	Heckman, Ichimura and Todd (1997, 1998)
5. Other designs 5.1 Regression discontinuity designs 5.2 Instrumental variables (IV) 5.3 Interrupted time series designs 5.4 Differential rate of growth models 5.5 Analysis of covariance models	Summarised by Imbens (2004) and reviewed by Winship and Morgan (1999)

In this study, various methods will be applied in order to evaluate the impact of microfinance participation on wellbeing. The models used for the next empirical analysis consists including matching estimators, and propensity score analysis with nonparametric regression.

6.3.3 Matching estimators

1) Bias-corrected matching estimator

This method developed by Abadie and Imbens (2002) is used when the matching is not exact and the simple estimator tends to be biased in finite samples. The bias term which corresponds to the matching discrepancies can be found especially with k continuous covariates. Using a bias-corrected matching estimator can eliminate the bias that remains after matching. The difference within the matches for the differences in their covariate values can be adjusted using a least squares regression following these four steps.

Step 1: In the case of estimating the SATE, run regression using only the data in the matched sample.

$$\mu_w(x)=E\{Y(w)\mid X=x\} \quad for \begin{cases} w=o\ (control\ condition) \\ w=1\ (treatment\ condition) \end{cases}$$

Then run two separate regression models. One uses the data of *w = 0* and another uses the data of *w = 1*. Each model uses *Y(w)* as a dependent variable and all covariates are used as independent variables.

Step 2: Let the intercept of the regression function be $\hat{\beta}_{wo}, \hat{\beta}'_{w1}$ for the two regression models. Select the $\hat{\beta}_{wo}, \hat{\beta}'_{w1}$ that minimise the weighted sum of squared residuals using a weight, $K_M(i)$. The adjustment term $\hat{\mu}_w$ for *w = 0, 1* is a predicted value based on the following equation.

$$\hat{\mu}_w = \hat{\beta}_{w0} + \hat{\beta}'_{w1}x \quad where$$
$$(\hat{\beta}_{w0}, \hat{\beta}'_{w1}) = \arg\min_{\{\hat{\beta}_{w0}, \hat{\beta}'_{w1}\}} \sum_{i:W_i=w} K_M(i)(Y_i - \hat{\beta}_{w0} - \hat{\beta}'_{w1}X_i)^2$$

Step 3: After obtaining the adjustment term $\hat{\mu}_w$ for both regression models, then use the term to correct the bias embedded in the simple matching estimator. The bias-corrected estimator the uses the following equations to impute the missing potential outcomes:

$$\tilde{Y}_i(0) = \begin{cases} Y_i & if\ W_i = 0 \\ \dfrac{1}{\#J_M(i)} \sum_{l\in J_M(i)} Y_l \{Y_l + \hat{\mu}_o(X_i) - \hat{\mu}_o(X_l)\} & if\ W_i = 1 \end{cases}$$

$$\tilde{Y}_i(1) = \begin{cases} \dfrac{1}{\#J_M(i)} \sum_{l\in J_M(i)} Y_l \{Y_l + \hat{\mu}_1(X_i) - \hat{\mu}_1(X_l)\} & if\ W_i = 0 \\ Y_i & if\ W_i = 1 \end{cases}$$

Step 4: To estimate the SATT or PATT, estimate the regression function for the controls, $\hat{\mu}_0$. To estimate SATC or PATC, estimate the regression function for the treated, $\hat{\mu}_1$.

Instead of using the simple matching estimator, this method can be used especially when matching on several continuous covariates that create no exact or very poor matches.

2) Matching with bias-corrected and robust variance estimators

This section presents the results from the application of matching with bias-corrected and robust variance estimators. The primary study objective was to test a research hypothesis regarding the causal effect of microfinance scheme participation on subjective and psychological wellbeing, specifically positive and negative affects and life satisfaction.

For this application, the findings from the examination of psychological wellbeing index: positive and negative affect schedule scores or PANAS and life satisfaction scores are reported. Higher scores on PANAS index are considered an indication of higher positive psychological wellbeing which is an outcome the outcome variable in this study.

As the study participants were classified into two groups: borrowers who participated in a microfinance scheme and those who never participated in any schemes. Thus, this dichotomous variable indicated the treatment condition in the study: those who ever participated in a microfinance programme versus controls who never been a member of any programmes. Of the 509 study borrowers, 240 had participated in a microfinance programme and were considered as the treated group, and 269 participants had never been members of any programmes and were considered the control group.

The treatment effect on subjective and psychological wellbeing was assessed considering the following covariates or matching variables:

(a) Borrower's gender;
(b) Borrower's age;
(c) Borrower's age squared;
(d) Borrower's education attainment;
(e) Borrower's health status; and
(f) Locality (living in the remote area or in the village centre)

The bias-corrected matching estimator was used in order to conduct matching for the dataset and to correct for bias corresponding to the matching discrepancies between matched units and their matches on the continuous covariates. According to previous literature, this analysis chose four matches per observation following the recommendation of Abadie et al (Abadie et al, 2004).

Before estimating the treatment effects of microfinance participation on subjective wellbeing, the assumption of the homoscedastic variance estimator needs to be examined. It is assumed that the unit-level treatment effect is constant and that the conditional variance of $Y_i(w)$ given X_i does not vary with either covariates or the treatment. To test whether the data met the homoscedastic assumption, first, a regression of the psychological wellbeing index on the matching variables plus the dichotomous treatment variable was run. Then, the Breusch-Pagan and Cook-Weisberg tests of heteroscedasticity for each of the independent variables were tested. The results showed that borrower's age was statistically significant ($p < 0.000$) and indicated that the conditional variance of the outcome variable was not constant across levels of respondent's age. Based on this finding, the robust variance estimator that allows for heteroscedasticity was used with four matches in the second matching stage to run the robust variance estimator.

6.3.4 Propensity score matching with nonparametric regression

Another method used for impact analysis in this study is the propensity score matching with nonparametric regression. Heckman, Ichimura, and Todd (1997, 1998) developed this technique and applied to evaluations of job-training programmes and presented a rigorous distribution theory for the nonparametric regression method such as the local linear regression with a tricube kernel or lowess (Heckman, Ichimura, and Todd, cited in Guo and Fraser, 2010, p. 245). This method is sometimes called kernel-based matching as it allows estimation of treatment effects for the treated by using information from all possible controls within a predetermined span (Heckman et al, 1998). Difference-in-difference approach is another name for this model when it is applied to two-time-point data such as analysing pre- and post-treatment data in order to show change triggered by an intervention in a dynamic fashion. Technically, Guo and Fraser (2010, p. 245) mentioned that it was very complex to programme and calculate standard errors

based on the asymptotic properties of local linear regression. Therefore, bootstrapping is used to draw statistical inference for implementing the estimator.

Heckman et al (1997) developed algorithms for the kernel and local linear matching from the nonparametric regression method for curve smoothing (Heckman et al, 1997, 1998; Smith and Todd, 2005). By this method, one-to-many matching is possible by calculating the weighted average of the outcome variable for all non-treated cases and comparing that weighted average with the outcome of the treated case. The difference between the two terms yields an estimate of the treatment effect for the treated. A sample average for all treated cases is an estimation of the sample average treatment effect for the treated group.

$$ATT = \frac{1}{n_1} \sum_{i \in I_1 \cap S_p} \left[Y_{1i} - \sum_{j \in I_0 \cap S_p} W(i, j) Y_{oj} \right]$$

Where ATT = The average treatment effect for the treated

n_1 = The number of treated cases

I_0 = A set of indices for controls

I_1 = A set of indices for programme participants

Y_0 = The outcomes of control cases

Y_1 = The outcomes of treated cases

$W(i, j)$ = The weight or distance on propensity score between *i* and *j.*

The term $\sum_{j \in I_o \cap S_p} W(i, j) Y_{oj}$ measures weighted average of the outcome for all untreated cases that match to participant *i* on the propensity score differentially using different weights of $W(i, j) Y_{oj}$. In the kernel-based matching, this term implies that each treated case matches on all controls falling into the common support region rather than 1-to-1 or 1-to-*n*.

Outcome Y_{1i} is compared with an average of the outcomes Y_{0j} for matched case $i \in I_0$ in the untreated sample in order to estimate a treatment effect for each treated case $i \in I_1$. The propensity score P(x) derived from logistic or probit regression on covariates X are calculated. If the estimated P(X) of an untreated control that is

closer to the treated case $i \in I_1$, the untreated case gets a higher weight when constructing the weighted average of the outcome.

In this study, two matching approaches are used in order to estimate the impact of participation in the microfinance programme on wellbeing. The first one is the kernel estimator and the latter is the local linear regression approach.

1) The kernel estimator

The first estimation algorithm aims to construct the weighted mean for a focal point using various kernel functions (Guo and Fraser, 2010). The fitted value at a focal point x_0 can be obtained by

$$\hat{f}(x_0) = \hat{y}|x_0 = \frac{\sum_{i=1}^{n} G(z_i) y_i}{\sum_{i=1}^{n} G(z_i)}$$

Given $z_i = \frac{(x_i - x_0)}{h}$ denote the scaled, signed distance between the *x* value for the *i*th observation and the focal x_0 , where the scale factor *h* is determined by the kernel function. Using the focal point as the centre, we can determine the number of observations that fall into a span or bandwidth (BW). For example, BW equals to 0.5 means that a span containing 50% of the total observations centering the focal point.

Several methods have been developed to estimate a kernel function. In this study four types of kernel functions are used including the tricube kernel, the Gaussian kernel, the rectangular kernel and the Epanechnikov kernel.

The tricube kernel (TRI)

The tricube kernel is a common choice among other kernel-based matching. The form of this function is

$$G_T(z_i) = \begin{cases} (1 - |z_i|^3)^3 & for\ |z_i| < 1 \\ 0 & for\ |z_i| \geq 1 \end{cases}$$

$$z_i = \frac{(x_i - x_o)}{h}$$

where *h* is the number of observations falling into a span centred at the focal x_o when calculating z_i

The normal kernel or the Gaussian kernel (GAU)

For the Gaussian kernel, *h* is the standard deviation of a normal distribution centred at the focal x_o when calculating z_i

$$G_N(z_i) = \frac{1}{\sqrt{2\pi}} e^{-z_i^2/2}$$

$$z_i = \frac{(x_i - x_o)}{h}$$

The rectangular kernel or the uniform kernel (REC)

This kernel function gives equal weight to each observation in a span centred at x_o. Therefore, it produces an unweighted local average.

The Epanechnikov kernel (EPA)

This function has a parabolic shape with support [-1, 1] and the kernel is not differentiable at $z = \pm 1$.

2) Local linear regression estimator (lowess)

This method is also called local polynomial regression. Comparing this method to the kernel estimator, this method is more complex as it uses a more sophisticated method to calculate the fitted y values. In contrast to the kernel estimator, this approach does not aim to construct a weighted average but it attempts to construct a smooth local linear regression with estimated β_0 and β_1 that minimises $\sum_1^n [Y_i - \beta_0 - \beta_1(x_i - x_0)]^2 G\left(\frac{x_i - x_0}{h}\right)$,

Where a tricube kernel is $G\left(\frac{x_i - x_0}{h}\right) = G_T(z_i) = \begin{cases} (1-|z_i|^3)^3 & for\ |z_i| < 1 \\ 0 & for\ |z_i| \geq 1 \end{cases}$

The linear regression line does not always very accurately reflect the relationship between *x* and *y*. To improve the fit of the line, it is possible to analyse the relationship between dependent and independent variable using a mathematical function to draw a smooth curve that better conforms to the data. However, the relationship between two variables may be too complex. A smooth curve produced by nonparametric regression then may be useful for the analysis.

The local linear regression is different from the kernel estimator. The following equation represents local linear regression or lowess with a tricube function to determine $W(i, j)$ which is used in local linear matching.

$$W(i,j) = \frac{G_{ij}\sum_{k\in I_0} G_{ik}(P_k - P_i)^2 - \left[G_{ij}(P_j - P_i)\right]\left[\sum_{k\in I_0} G_{ik}(P_k - P_i)\right]}{\sum_{j\in I_o} G_{ij}\sum_{k\in I_o} G_{ij}(P_k - P_i)^2 - \left(\sum_{k\in I_0} G_{ik}(P_k - P_i)\right)^2},$$

Where

$G(.)$ = A tricube kernel function

$$G_{ij} = \left(\frac{(P_j - P_i)}{h}\right)$$

Kernel matching can be thought of as a weighted regression of Y_{oj} on an intercept with weights given by the kernel weights, $W(i, j)$, that vary with the point of evaluation. The weights depend on the distance between each comparison group observation and the participant observation for which the counterfactual is being constructed. The estimated intercept provides the estimate of the counterfactual mean. Local linear matching differs from kernel matching in that it includes in addition to the intercept a linear term in P_i. Inclusion of the linear term is helpful whenever comparison group observations are distributed asymmetrically around the participant observations, as would be the case at a boundary point of P or at any point where there are gaps in the distribution of P. The empirical analysis for this chapter compares results from local linear matching with the kernel matching using different types of kernel-based matching.

6.4 The loan culture in Libong community

As mentioned in chapter four, Libong community is one of the remote areas situated far from the city centre. The Bank of Agriculture and Agricultural Cooperation (BAAC) attempted to facilitate agricultural credit for farmers in this community. However, this attempt failed due the high operating cost, the geographical and distance matters and the overly rigid borrowing and repayment rules, which deterred farmers from utilising the service and pushed them to continue accessing the loans from more easily accessible but costly sources. As a result, some villagers

in the community are suffering from lacking of choices for saving and borrowing loans.

6.4.1 *'Bia Dork'* as the main source of loan

The most accessible but most expensive alternative for getting loans for rural villagers is borrowing loans through an informal source which is known as the '*Bia Dork*' (BD). It is provided by some wealthy local moneylenders in the community. According to observations and interviews, this kind of loan is the most accessible and popular source for villagers as borrowers can receive the loan immediately especially in the case of an emergency cash needs. Even though the interest rate or *'Dork'* of this kind of loan is very high, in general 20 percent per month, there is a high demand for BD. On the one hand, clientele of the BD enjoy a convenience of this informal credit as it does not require borrowers to satisfy specific membership obligations. Some locals take out the loan as they do not have any other options available.

In general, the BD is similar to the 'pay day loan'. But some of the BD clientele prefer the *'Ku Hug Dork'* which is the BD with a special arrangement. An upfront interest of approximately 20 percent is charged when the loan is taken out. Then, the principal is daily paid back till the end of the loan period. For example, in order to borrow 100 pounds, a moneylender grants only 80 pounds to a borrower. The borrower then has to pay back 10 pounds per day for 10 days to complete a loan cycle and be eligible for the next loan. This informal credit scheme seems to be convenience to borrowers but at the same time it can be seen as a poverty and debt trap as well.

6.4.2 The intervention of the NVUCF and LSGF

Since 2001, an implementation of the government microfinance programme, NVUCF, provides an alternative solution for borrowers. Even though there are other government loans including the small and medium loan project (SML) and the wellbeing project fund (WPF), those loans could not provide sufficient fund for excessive demand. Some programmes could not survive as a result of mismanagement and corruption.

Another source of loans is provided by the Libong savings group founded in 1990. This group is another endeavour by local people to encourage people to save and at the same time help provide some loans to its members. This group's main goals are to boost local savings, deliver flexible lending schemes, and encourage cooperation between local people in the community.

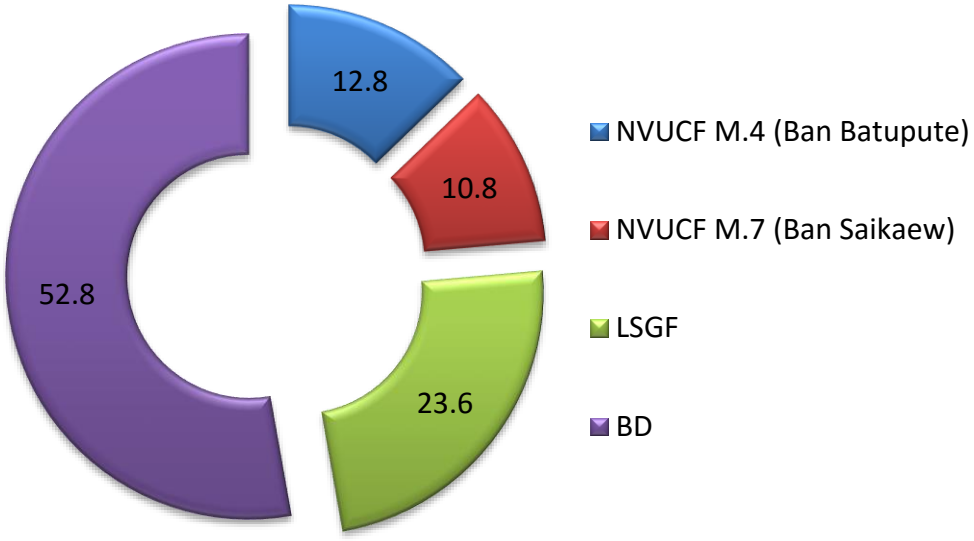


Figure 6.2 Source of loan in Libong community

The intervention of the NVUCF and the LSGF facilitated villagers in terms of access to financial services; however, the main channel which is higher than 50 percent for obtaining loans is from local moneylenders.

In the next step, four criteria including gender, occupation, poverty level and locality are taken into account in order to explore borrowers' characteristics within the three sources of loans. Some correlation coefficients (Chi-square test, Cramer's V statistics, Lambda statistics, and Goodman and Kruskal's tau statistics) were employed in order to examine association between borrowers' characteristics and source of loan. The results are shown in table 6.8.

Table 6.8 Borrowers' characteristics and source of loan association

Borrowers' characteristics	Source of loan				r
	NVUCF	LSGF	BD	Total	
Gender					
Female	51 (18.9%)	42 (15.6%)	177 (65.5%)	270 (53.0%)	$\chi^2 = 38.61^{\dagger}$ $V_c = 0.275^{\dagger}$ $\lambda = 0.113^{**}$ $\tau = 0.046^{**}$
Male	69 (28.9%)	78 (32.6%)	92 (38.5%)	239 (47.0%)	
Occupation					
Unemployed	1 (25.0%)	3 (75.0%)	0 (0.0%)	4 (0.8%)	$\chi^2 = 132.71^{\dagger}$ $V_c = 0.361^{\dagger}$ $\lambda = 0.108^{**}$ $\tau = 0.150^{\dagger}$
Rubber farmer	61 (36.7%)	53 (31.9%)	52 (31.3%)	166 (32.6%)	
Fisherman	13 (5.5%)	42 (17.8%)	181 (76.7%)	236 (46.4%)	
Shopkeeper	21 (41.2%)	10 (19.6%)	20 (39.2%)	51 (10.0%)	
Housewife	5 (29.4%)	2 (11.8%)	10 (58.8%)	17 (3.3%)	
Other	19 (54.3%)	10 (28.6%)	6 (17.1%)	35 (6.9%)	
Poverty level					
Extremely poor	0 (0.0%)	0 (0.0%)	34 (12.6%)	34 (6.7%)	$\chi^2 = 42.52^{\dagger}$ $V_c = 0.204^{\dagger}$ $\lambda = 0.000$ $\tau = 0.050^{**}$
Moderate poor	11 (24.4%)	5 (11.1%)	29 (64.4%)	45 (8.9%)	
Near-poor or vulnerable	22 (29.7%)	24 (32.4%)	28 (37.8%)	74 (14.5%)	
Non-poor	87 (24.4%)	91 (25.6%)	178 (50.0%)	356 (69.9%)	
Locality					
Remote or isolated areas	14 (26.9%)	4 (7.7%)	34 (65.4%)	52 (10.2%)	$\chi^2 = 8.195^{**}$ $V_c = 0.127^{**}$ $\lambda = 0.000$ $\tau = 0.008^{\dagger}$
Village centre or nearby	106 (23.2%)	116 (25.4%)	235 (51.4%)	457 (89.8%)	
N	**120**	**120**	**269**	**509**	

Note: ** $p < 0.05$, $^{\dagger}p < 0.001$

Comparing between three sources of loans, it was found that both male and female candidates preferred to get their loans from local moneylenders, rather than other sources. In Thai society, women are generally responsible for family financial

management. Thus, it was no doubt that there were more female borrowers than male. In the case of female clients, as they have to deal with day to day household spending, so informal loans seems to be the most convenience channel for them in order to smoothen family unexpected expenditure.

In terms of occupation, the village fund seemed to serve or benefit to shopkeepers who are local entrepreneurs and small food venders. While fishermen, housewives and rubber farmers tended to take out loans from local moneylenders. Considering the association analysis, occupation was the strongest borrowers' characteristic which was related to sources of loans with the highest value of Cramer's V (V_c = 0.361).

Considering the outreach of each source of loan to the poor, it was unsurprisingly found that both microfinance programmes could not potentially reach to the poorest group in the community. The reason behind this incidence could be explained by a long processing time to get the loan and the difficulty in required documents for applying for loans from microfinance schemes. Thus, extremely poor villagers who are considered to be the most vulnerable group normally rely on relatives and local moneylenders who can provide them loans at any time they need.

Locality and a proximity to the community centre is another factor which can affect the decision for borrowing or participating in the microfinance programme. It was clear that people in the remote or isolated areas tended to get the loan from the village fund rather than from the LSGF group. The LSGF group members are normally asked to participate in group meetings at least once a month. Whilst there is only annually meeting for the village fund. The regular meeting of the LSGF discouraged borrowers from joining the group as it was difficult for them to travel to group meetings.

6.4.3 *'Bia Satcha'* and its link to the borrowing and saving behaviour

This section discusses the loan amount, monthly saving and saving behaviour of villagers within three different sources of loans. The results in table 6.9 present comparisons of loan amount and monthly saving across three sources of loans using the analysis of variance (ANOVA) with Bonferroni and Tamhane methods for the multiple comparisons. Two robust tests, the Welch statistics and the Brown-

Forsythe test were employed as a means to confirm the differences in loan amount and monthly saving among the three groups of clienteles.

Table 6.9 Loan amount and monthly saving within different sources of loans

Q, S	i	j	Mean (μ_i) ($STDV_i$)	F(2, 506) (L)	W (B-F)	($\mu_i - \mu_j$) Bonferroni	($\mu_i - \mu_j$) Tamhane
Loan amount (Q)	NVUCF	LSGF	16,975.00	73.292†	41.596†	-10451.533†	-10451.533†
(μ_t = 17,900.75,	(N=120)	BD	(4,175.69)	(141.046†)	(50.264†)	2910.688**	2910.688†
$STDV_t$ =	LSGF	NVUCF	27,426.53			10451.533†	10451.533†
11,446.60)	(N=120)	BD	(18,840.93)			13362.221**	13362.221†
	BD	NVUCF	14,064.31			-2910.688†	-2910.688†
	(N=269)	LSGF	(5,216.22)			-13362.221†	-13362.221†
Monthly	NVUCF	LSGF	2.33	116.605†	91.233†	-52.667†	-52.667†
saving (S)		BD	(6.447)	(26.581†)	(78.826†)	-2.760	-2.760
(μ_t = 16.21,	LSGF	NVUCF	55			52.667†	52.667†
$STDV_t$ = 34.76)		BD	(39.108)			49.907†	49.907†
	BD	NVUCF	5.09			2.760	2.760
		LSGF	(26.621)			-49.907†	-49.907†

Note: ** $p < 0.05$, *** $p < 0.01$, †$p < 0.001$, L = Levene's test

Comparing the loan amount within three groups, it was found that there was a significant difference between the loan amount and monthly saving of the village fund clients and other groups. The loan amount which was granted to local clientele in the case of the LSGF was the highest. The result from the analysis of variance, using the Tamhane method for multiple comparisons as the Levene's test was significant, confirmed that the loan amount from the LSGF was significantly higher than those from the NVUCF and the BD.

With regards to monthly saving, it was found that there was a significant difference in monthly saving among three sources of loans. The LSGF clients seemed to save significantly more than other groups. The NVUCF clients were the group with the lowest monthly saving among the three. This saving behaviour is related to the monthly promissory savings or '*Bia Satcha*'. This scheme is an approach for both the NVUCF and the LSGF group in order to encourage members to maintain their saving behaviour. However, *Bia Satcha* seemed to be more effective in the case of the LSGF group as a result of regular meeting and good communication between group committee and its members. The effect of *Bia Satcha* led to a consistent saving behaviour. A comparison of saving habit among the three groups is shown in the following table.

Table 6.10 Saving behaviour

Source of loan	Saving behaviour			N	N_{BS}
	$\bar{S}$ (Baht)	$S = 0$	$S > 0$		
NVUCF	2.33	106 (88.3%)	14 (11.7%)	120	9 (8.3%)
LSGF	55.00	20 (16.7%)	100 (83.3%)	120	100 (91.7%)
BD	5.09	256 (95.2%)	13 (4.80%)	269	0 (0.00%)
Total	16.21	382	127	509	109
Correlation between source of loan and saving behaviour					
χ^2 = 287.883†					
Cramer's V = 0.752†					
λ = 0.630†					
Goodman and Kruskal's τ = 0.566†					

Note: †$p < 0.001$

Table 6.10 shows saving behaviour by sources of loans. It was found that members of the LSGF group tended to save more than the NVUCF's members. According to the correlation analysis, we can conclude that the LSGF's members had a strong behaviour of saving, while the village fund's borrowers and the rest who got the loan from local moneylenders seemed not to save or failed to achieve the monthly saving target.

Considering number of people who had *Bia Satcha* (N_{BS}), it was very clear that the LSGF group succeeded in encouraging its members to have regularly saving behaviour. This scheme was also introduced in the case of the NVUCF group but it could not maintain. According the observation in the community, this failure derived from the lack of group meeting and sharing information about the benefit of the saving scheme. By contrast to the LSGF group which was having a normal group meeting every month created a significant different in terms of increasing and maintaining the level of saving in Libong community.

6.4.4 Loan use behaviour

Why people want to receive the loans and what do they use it for? Everyone has different reasons for getting the loans. The High correlation coefficients shown in

table 6.11 indicated that there was a significant link between participating in a particular group and loan use behaviours.

Table 6.11 Source and key use of loan

Source of loan	Use of loan (ω)				N
	ω_1 Family business expenditure	**ω_2** Essential household expenditure	**ω_3** Purchase of luxury goods	**ω_4** Debt repayment	
NVUCF	**64 (53.3%)**	**30 (25.0%)**	4 (3.3%)	**22 (18.3%)**	120
LSGF	**114 (95.0%)**	6 (5.0%)	0 (0.0%)	0 (0.0%)	120
BD	24 (8.9%)	**197 (73.2%)**	0 (0.0%)	**48 (17.8%)**	269
Total	202 (39.7%)	233 (45.8%)	4 (0.8%)	70 (13.7%)	509
Correlation between source of loan and loan use					
	χ^2 = 296.082†				
	Cramer's V = 0.539†				
	λ = 0.514†				
	Goodman and Kruskal's τ = 0.361†				

Note: †$p < 0.001$

Obviously, there was a significant difference between these three groups of borrowers in loan use behaviours. The majority of the LSGF members mainly used their loans for family business and new investment. Though some of the NVUCF members used the loans in the same way, the proportion is relatively lower. By contrast to those who got the loans from local moneylenders, the main use of loans was for household consumption rather than investment. Considering spending on luxury goods, only 3.3 percent in the case of the NVUCF was found. However, using the loans for repaying debt was common for the NVUCF and the BD group.

Table 6.12 Source and use of loan

Source of loan	Use of loan (ν)								N
	ν_1	ν_2	ν_3	ν_4	ν_5	ν_6	ν_7	ν_8	
NVUCF	12 (10.0)	52 (43.3)	14 (11.7)	10 (8.3)	1 (0.8)	5 (4.2)	4 (3.3)	22 (18.3)	120
LSGF	13 (10.8)	101 (84.2)	5 (4.2)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	120
BD	13 (4.8)	11 (4.1)	17 (6.3)	0 (0.0)	0 (0.0)	180 (66.9)	0 (0.0)	48 (17.8)	269
Total	38 (7.5)	164 (32.2)	36 (7.1)	11 (2.2)	1 (0.2)	185 (36.3)	4 (0.8)	70 (13.8)	509
Correlation between source of loan and loan use									
χ^2 = 394.477†									
Cramer's V = 0.622†									
λ = 0.457†									
Goodman and Kruskal's τ = 0.302†									

Note: †$p < 0.001$

ν_1 = Investment in a new family business
ν_2 = Purchase of new equipment and tools
ν_3 = House repair
ν_4 = Payment of school fees
ν_5 = Purchase of medicines
ν_6 = Purchase of food and clothing
ν_7 = Purchase of luxury goods
ν_8 = Debt repayment

Table 6.12 highlights the correlation between loan use and source of loans. Borrowers in the NVUCF scheme and in the informal loan system tend to use their loans for debt and for buying goods for household rather than for buying equipment or tools for their business comparing to the savings group members. The saving group members mostly used their loan for their business and related activities which is relatively higher than the other two groups. According to the correlation analysis, it was clear that there was a significant association between loan use and source of loans. The NVUCF's borrowers and those who got the loan from local moneylenders seemed to spend the loans more for debt repayment compared to the LSGF's clients. The LSGF's members mostly used the loans for their business and new investment. Those who borrowed from local moneylenders mostly used the loans for food and clothing for the main purpose (66%) which was very high compared to other groups. The difference of how borrowers used their loans definitely affected their lives and their family's wellbeing. To further analyse the impact of the loan use on happiness and wellbeing, the impact of the loan and group

participation will be explored. In the first step, the analysis of variance (ANOVA) is used for this purpose and the results are shown in table 6.13 to 6.15.

Table 6.13 Individual level impact analysis

Individual impact	i	j	Mean (μ_i) ($STDV_i$)	F	Robust tests W (B-F)	($\mu_i - \mu_j$) Bonferroni	*p*
Income (μ_t = 0.33, $STDV_t$ = 0.630)	NVUCF (N=120)	LSGF	0.30 (0.603)	156.132†	98.147† (101.792†)	-.700†	0.000
		BD				.263†	0.000
	LSGF (N=120)	NVUCF	1.00 (0.778)			.700†	0.000
		BD				.963†	0.000
	BD (N=269)	NVUCF	0.04 (0.190)			-.263†	0.000
		LSGF				-.963†	0.000
Business profit (μ_t = 0.28, $STDV_t$ = 0.521)	NVUCF	LSGF	0.38 (0.551)	116.605†	91.233† (78.826†)	-.375†	0.000
		BD				.338†	0.000
	LSGF	NVUCF	0.75 (0.625)			.375†	0.000
		BD				.713†	0.000
	BD	NVUCF	0.04 (0.208)			-.338†	0.000
		LSGF				-.713†	0.000
Liquidity or cash-flow (μ_t = 0.29, $STDV_t$ = 0.671)	NVUCF	LSGF	0.23 (0.601)	161.263†	113.689† (122.055†)	-.800†	0.000
		BD				.232†	0.000
	LSGF	NVUCF	1.02 (0.716)			.800†	0.000
		BD				1.032†	0.000
	BD	NVUCF	-0.01 (0.366)			-.232†	0.000
		LSGF				-1.032†	0.000
Personal savings (μ_t = 0.28, $STDV_t$ = 0.652)	NVUCF	LSGF	0.15 (0.545)	117.854†	56.281† (76.512†)	-.783†	0.000
		BD				.109	0.198
	LSGF	NVUCF	0.93 (0.923)			.783†	0.000
		BD				.892†	0.000
	BD	NVUCF	0.04 (0.198)			-.109	0.198
		LSGF				-.892†	0.000
Personal assets (μ_t = 0.19, $STDV_t$ = 0.451)	NVUCF	LSGF	0.10 (0.541)	21.226†	17.346† (17.143†)	-.317	1.000
		BD				-.034†	0.000
	LSGF	NVUCF	0.42 (0.495)			.317†	0.000
		BD				.283†	0.000
	BD	NVUCF	0.13 (0.341)			.034	1.000
		LSGF				-.283†	0.000
Knowledge (μ_t = 0.32, $STDV_t$ = 0.639)	NVUCF	LSGF	0.02 (0.129)	558.439†	203.185† (380.942†)	-1.258†	0.000
		BD				-.017	1.000
	LSGF	NVUCF	1.27 (0.673)			1.258†	0.000
		BD				1.242†	0.000
	BD	NVUCF	0.03 (0.180)			.017	1.000
		LSGF				-1.242†	0.000
Self-esteem (μ_t = 0.26, $STDV_t$ = 0.803)	NVUCF	LSGF	0.30 (0.630)	166.418†	116.772† (128.175†)	-.808†	0.000
		BD				.441†	0.000
	LSGF	NVUCF	1.11 (0.896)			.808†	0.000
		BD				1.250†	0.000
	BD	NVUCF	-0.14 (0.451)			-.441†	0.000
		LSGF				-1.250†	0.000
Neighbour's relationship (μ_t = 0.35, $STDV_t$ = 0.626)	NVUCF	LSGF	0.38 (0.566)	164.270†	106.996† (107.314†)	-.633†	0.000
		BD				.338†	0.000
	LSGF	NVUCF	1.01 (0.783)			.633†	0.000
		BD				.971†	0.000
	BD	NVUCF	0.04 (0.190)			-.338†	0.000
		LSGF				-.971†	0.000

Table 6.14 Household level impact analysis

Household impact	i	j	Mean (μ_i) ($STDV_i$)	F	Robust tests W (B-F)	($\mu_i - \mu_j$) Bonferroni	*p*
Household income (μ_t = 0.51, $STDV_t$ = 0.698)	NVUCF (N=120)	LSGF	0.78 (0.724)	320.147†	341.553† (214.712†)	-0.500†	0.000
		BD				0.735†	0.000
	LSGF (N=120)	NVUCF	1.28 (0.537)			0.500†	0.000
		BD				1.235†	0.000
	BD (N=269)	NVUCF	0.05 (0.215)			-0.735†	0.000
		LSGF				-1.235†	0.000
Household savings (μ_t = 0.27, $STDV_t$ = 0.659)	NVUCF	LSGF	0.20 (0.544)	187.044†	102.787† (121.150†)	-0.825†	0.000
		BD				0.233†	0.000
	LSGF	NVUCF	1.02 (0.835)			0.825†	0.000
		BD				1.058†	0.000
	BD	NVUCF	-0.03 (0.180)			-0.233†	0.000
		LSGF				-1.058†	0.000
Household assets (μ_t = 0.21, $STDV_t$ = 0.597)	NVUCF	LSGF	0.25 (0.472)	107.787†	80.103† (90.081†)	-0.500†	0.000
		BD				0.306†	0.000
	LSGF	NVUCF	0.75 (0.677)			0.500†	0.000
		BD				0.806†	0.000
	BD	NVUCF	-0.06 (0.415)			-0.306†	0.000
		LSGF				-0.806†	0.000
Household debts (μ_t = 0.00, $STDV_t$ = 0.658)	NVUCF	LSGF	0.54 (0.564)	91.536†	82.909† (114.426†)	0.442†	0.000
		BD				0.828†	0.000
	LSGF	NVUCF	0.10 (0.301)			-0.442†	0.000
		BD				0.386†	0.000
	BD	NVUCF	-0.29 (0.649)			-0.828†	0.000
		LSGF				-0.386†	0.000
Household consumption (μ_t = 0.50, $STDV_t$ = 0.535)	NVUCF	LSGF	0.30 (0.588)	26.416†	28.677† (25.766†)	-0.467†	0.000
		BD				-0.161**	0.013
	LSGF	NVUCF	0.77 (0.444)			0.467†	0.000
		BD				0.306†	0.000
	BD	NVUCF	0.46 (0.499)			0.161**	0.013
		LSGF				-0.306*	0.000
Housing condition (μ_t = 0.22, $STDV_t$ = 0.471)	NVUCF	LSGF	0.37 (0.564)	29.096†	26.769† (20.954†)	-0.033	1.000
		BD				0.285†	0.000
	LSGF	NVUCF	0.40 (0.600)			0.033	1.000
		BD				0.318†	0.000
	BD	NVUCF	0.08 (0.275)			-0.285†	0.000
		LSGF				-0.318†	0.000
Health and nutrition (μ_t = 0.37, $STDV_t$ = 0.560)	NVUCF	LSGF	0.31 (0.515)	60.140†	41.809† (49.383†)	-0.500†	0.000
		BD				0.100	0.213
	LSGF	NVUCF	0.81 (0.665)			0.500†	0.000
		BD				0.600†	0.000
	BD	NVUCF	0.21 (0.407)			-0.100	0.213
		LSGF				-0.600†	0.000
Children's education (μ_t = 0.38, $STDV_t$ = 0.643)	NVUCF	LSGF	0.33 (0.521)	246.555†	150.109† (166.875†)	-0.842†	0.000
		BD				0.273†	0.000
	LSGF	NVUCF	1.17 (0.714)			0.842†	0.000
		BD				1.115†	0.000
	BD	NVUCF	0.05 (0.223)			-0.273†	0.000
		LSGF				-1.115†	0.000

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, †$p < 0.001$

Table 6.15 Community and environmental level impact analysis

Community and environmental impact	i	j	Mean μ_i ($STDV_i$)	F	Robust tests W (B-F)	($\mu_i - \mu_j$) Bonferroni	*p*
Community relationships (μ_t = -0.10, $STDV_t$ = 0.660)	NVUCF (N=120)	LSGF	-0.03	8.446†	7.809†	-0.108	0.592
		BD	(0.709)		(7.332†)	0.171	0.051
	LSGF (N=120)	NVUCF	0.08			0.108	0.592
		BD	(0.758)			0.279*	0.000
	BD (N=269)	NVUCF	-0.20			-0.171	0.051
		LSGF	(0.566)			-0.279*	0.000
Village activity participation (μ_t = 0.30, $STDV_t$ = 0.724)	NVUCF	LSGF	0.06	190.797†	112.430†	-1.092*	0.000
		BD	(0.748)		(120.817†)	0.036	1.000
	LSGF	NVUCF	1.15			1.092*	0.000
		BD	(0.816)			1.128*	0.000
	BD	NVUCF	0.02			-0.036	1.000
		LSGF	(0.148)			-1.128*	0.000
Village development (μ_t = 0.13, $STDV_t$ = 0.471)	NVUCF	LSGF	0.05	33.374†	33.815†	-0.367*	0.000
		BD	(0.720)		(21.931†)	0.017	1.000
	LSGF	NVUCF	0.42			0.367*	0.000
		BD	(0.495)			0.383*	0.000
	BD	NVUCF	0.03			-0.017	1.000
		LSGF	(0.180)			-0.383*	0.000
Environmental development (μ_t = 0.34, $STDV_t$ = 0.751)	NVUCF	LSGF	0.01	375.414†	284.995†	-1.375*	0.000
		BD	(0.716)		(246.366†)	-0.014	1.000
	LSGF	NVUCF	1.38			1.375*	0.000
		BD	(0.611)			1.361*	0.000
	BD	NVUCF	0.02			0.014	1.000
		LSGF	(0.192)			-1.361*	0.000

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, †$p < 0.001$

According to the results from table 6.13 to 6.15 showing impact analysis in three levels-individual, household and community level respectively. It was found that the savings group members showed a higher level of livelihood improvement in all levels compared to the NVUCF or the village fund's clients and the informal loan's borrowers. The difference was very significant for the individuals' indicators and some household indicators including household income, savings, consumption, debt and children's education which was significant at the level of 0.01.

For some indicators it was found that the impact was not significantly different between the NVUCF or the village fund's clients and the informal loan's borrowers such as health and nutrition and other community and environmental impact.

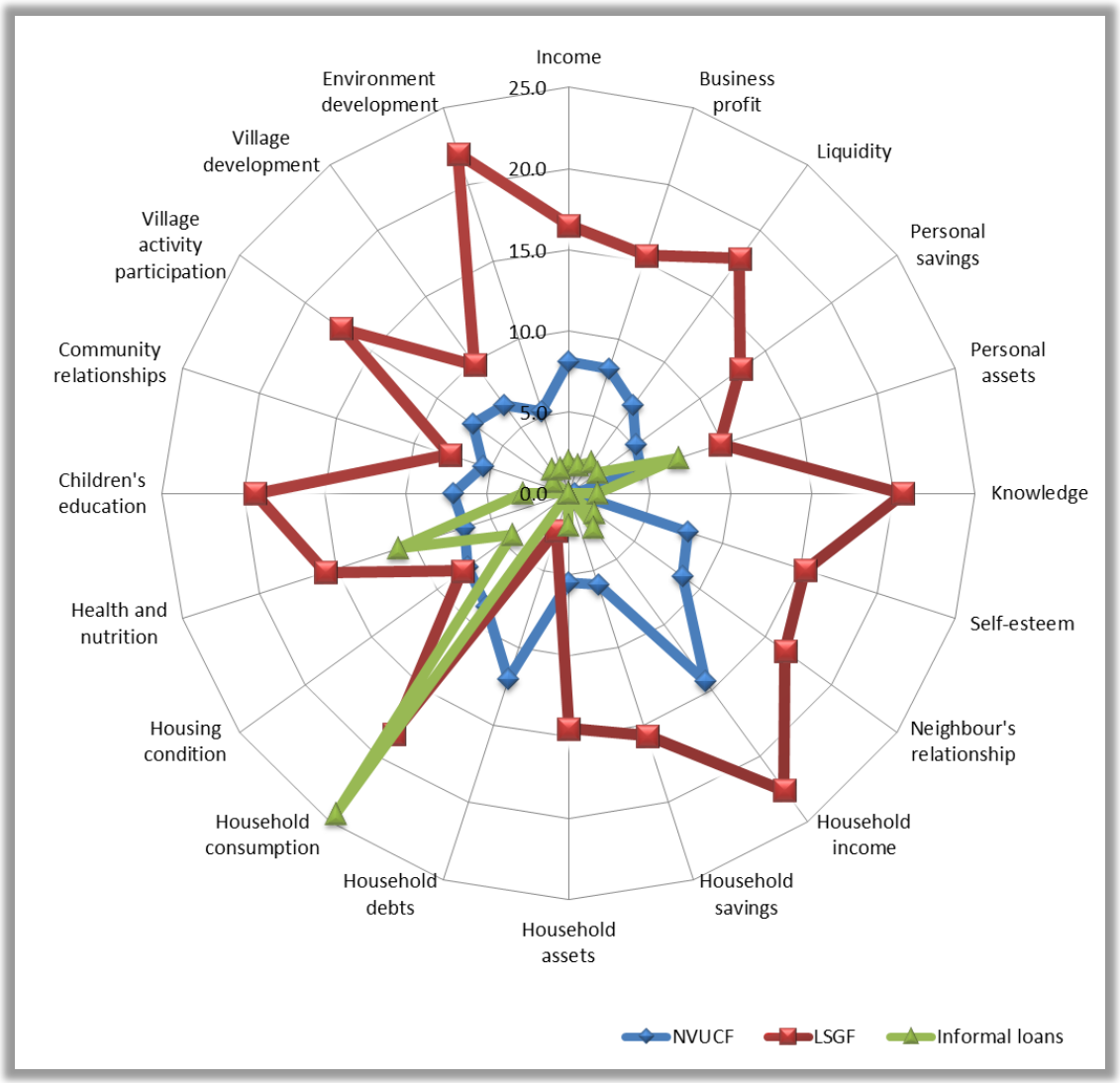


Figure 6.3 Wellbeing impact comparisons between different sources of loans

Figure 6.3 represents wellbeing impact comparison between three types of loans. Twenty impact indicators were taken into account for comparing the magnitude of the effect of the loans. It was clear that the wellbeing impact of the NVUCF group is more widely spread among the wellbeing indicators. Whereas the impact on the informal loans (BD) is smaller except with regard to the household consumption level which is affected most out of all three groups.

Overall, the impact of loan type is markedly different for the informal loans from that on the SGF and the NVUCF. The profile for informal loans is somewhat jagged as opposed to the SGF and the NVUCF, which show a more widely spread impact of loan type over several domestic areas.

In terms of household consumption level, the impact of the loan type is greater on informal loans than on the SGF and the NVUCF.

6.5 Individual level impact

6.5.1 The impact on individual's objective wellbeing

The first level of the impact of microfinance is hoping to transform each borrower's quality of life and his or her business. The radar chart below compares the percentage of the case increased in each indicator. It was clear that borrowers participated in the LSGF scheme experienced a higher expansion in eight dimensions compared to the NVUCF and the BD members.

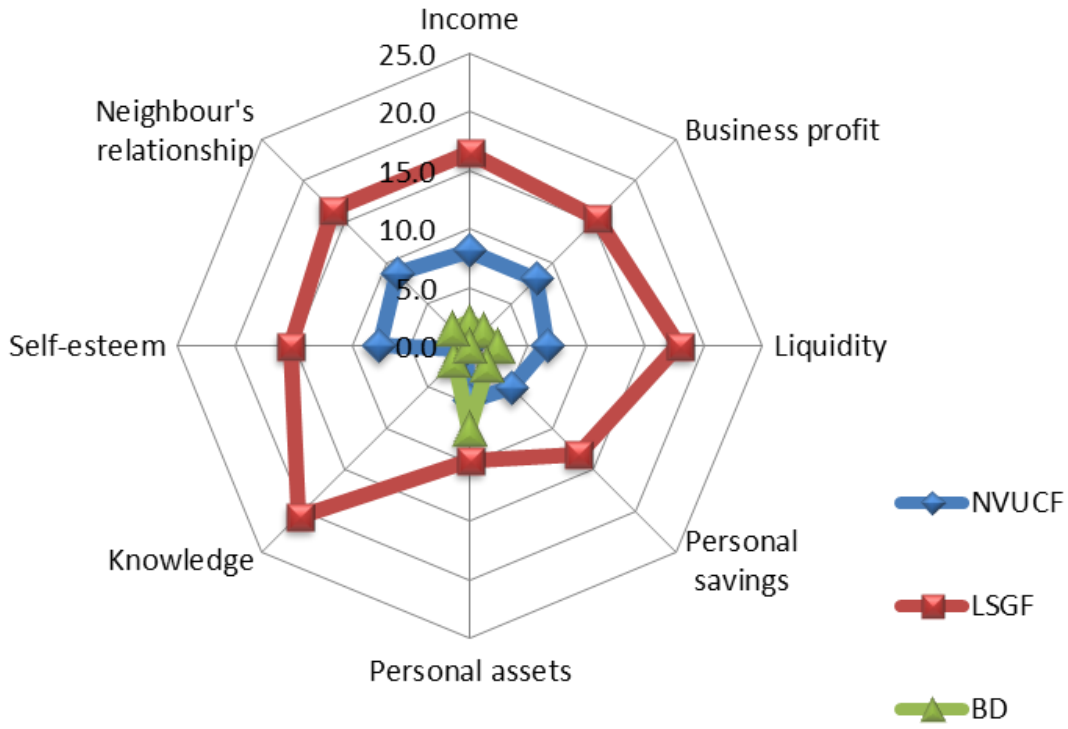


Figure 6.4 Individual level impact comparison by sources of loans

1) The impact on income, business profit and liquidity

Comparing the case of the savings group and the village fund, it was found that borrowers from the savings group used their loans for entrepreneurial purposes, created more income for the household and new businesses at increased levels, when compared with borrowers from the village fund.

2) The impact on personal savings and assets

Saving and self-control. In the case of the NVUCF, even if the borrowers have access to lucrative saving opportunities offered by the village fund scheme; most of them

fail to save. Certainly, the barriers to savings are not all externally imposed. Internal factors or human psychology is one of the causes. Generally, most borrowers hastily decide to buy what they want today (i.e. rice, fish sauce, snacks, a new dress, a new mobile phone) but to reasonably plan on spending money for important things tomorrow (i.e. school fees, window or door repairs, medical fees).

3) The impact on knowledge

Among the impacts of microfinance participation on an individual's wellbeing, an increase of knowledge, which can be seen by literacy and skill improvement, were reported to be the highest and the most visible change for participants in this study. Especially in the case of the LSGF members who participated in the group training and activities showed a significant change in terms of language proficiency, accounting skills and the improvement of household finance management skill. According to the figure 6.4, it was found that the LSGF members reported a significantly high level in knowledge improvement comparing to the NVUCF and the BD group. The results from interviewing and discussing with participants indicated that group training and attending skill development activities had a pivotal impact on participants' literacy level and generated a positive change on household financial management.

First, participating in microfinance group activities allowed participants a valuable opportunity to refurbish their language skills especially during the group meeting or to learn how to read and write in the case of unschooled members. A 45 year old female participant of the LSGF mentioned that:

> *"In the past, I could not read, could not write. I have finished P.4 (Equivalent to grade 4) but I am not keen on maths. I could not do accounting. After participating the savings group and attending some training programmes and group activities, I could write better and I could do accounting and manage the household revenue and spending more effectively, knowing how much my family earned and how much we spent and how much we could save. Comparing to the past, I could not do that. I am glad and proud that I can do that."*

4) The impact on self-esteem

Very few studies discussed the impacts of microfinance participation on self-esteem of participants of the microfinance scheme. According to the present study, participation in the microfinance programme and activities creates and boosts self-esteem of microfinance clients. Box 6.1 and the quote below from in-depth interview of a member of savings group network shows the impact of microfinance on self-esteem.

Box 6.1 Snapshots of self-esteem

- Lunai, a divorced 46 year old mum with three kids, found that she is very confidence after joining the group. The loans she got can help with her new seafood business and this can help her raise her kids on her own.

- A group of housewives received loans from the microfinance scheme for their handicraft projects. Their group gradually grew over time and expanded variety of products that distributed to different places in the country.

"I used to be only at home, cooking, looking after my children and doing all the housework. After joining the group, I had a chance to do other things such as being a group committee. I can earn some money from selling some handicrafts and group products. I can read and write. I like discussing and sharing my ideas to others in the group. Being part of the group makes me proud that I can find some money for my family and I can do something useful for my community."

(In-depth interview, Lunai, 46 year old female).

5) Other impacts

There were a lot of impacts from microfinance schemes in Libong community such as the impact on decision making of women, self-confidence, women's status and gender relations, family relationships and domestic violence, women's involvement and status in the community and so on. Some other positive impacts include harmony in the group in the case of the savings group, helping each other – talking and discussing about each other's problems helping to reduce negative emotions

such as stress, nervousness. Some negative were also observed in the village. For example, conflict with neighbours, changing behaviours in avoiding the main road in the community in order to avoid moneylenders in the village, relationship with the bailiff etc.

6.5.2 Impact on happiness and subjective wellbeing

In this section the impact of microfinance on happiness and subjective wellbeing will be examined. Here the impact will be indicated by self-reported happiness, positive and negative affects.

Table 6.16 Happiness by source of loan

Source of loan	Self-reported happiness (*H*)			Total
	Not too happy (*H=1*)	Fairly happy (*H=2*)	Very happy (*H=3*)	
NVUCF	24 (20.0%)	81 (67.5%)	15 (12.5%)	120
LSGF	18 (15.0%)	81 (67.5%)	21 (17.5%)	120
BD	39 (14.5%)	189 (70.3%)	41 (15.2%)	269
Total	**81 (15.9%)**	**351 (69.0%)**	**77 (15.1%)**	**509**

Table 6.16 shows happiness level of borrowers from each source of loan: the village fund (NVUCF), savings group (LSGF) and informal loan (BD). It was found that the savings group members seemed to report very happy in a higher proportion compared to other groups.

When asking about positive and negative feelings as a result of receiving the loan, it was found that the savings group member showed a higher level of positive feelings or emotions and had less negative feelings compared to clients of the village fund and the informal loan group as can be seen from figure 6.5 and 6.6.

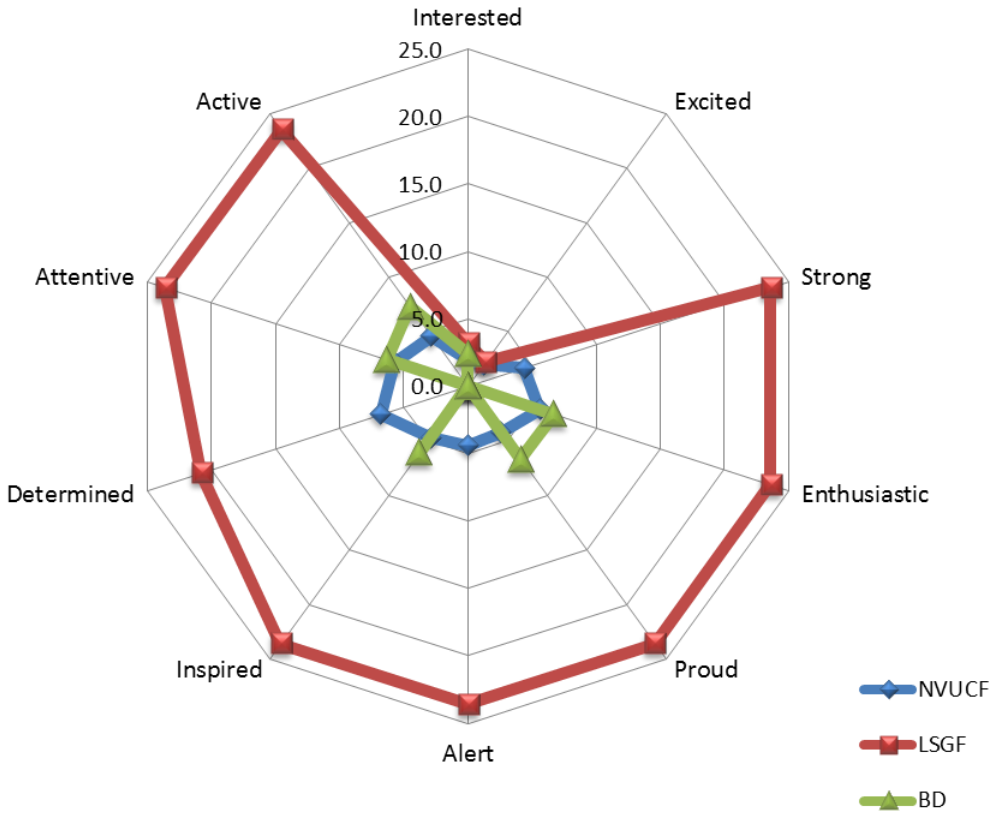


Figure 6.5 Positive affects (PA) within three sources of loans

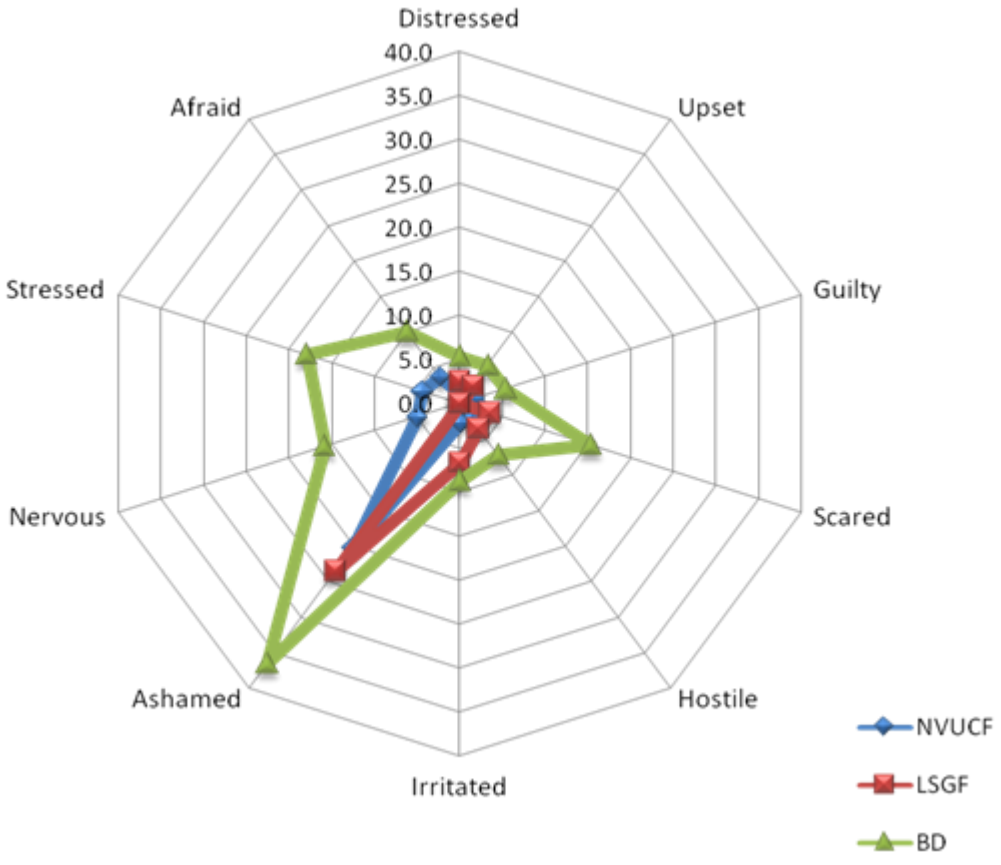


Figure 6.6 Negative affects (NA) within three sources of loans

To further the impact analysis on subjective wellbeing, the impact will be assessed using the estimated treatment effects on psychological wellbeing index using bias-corrected matching with robust variance estimators and compared to the OLS result. The OLS estimation here showed the effect on subjective and psychological wellbeing considering the same covariates as in bias-corrected matching with robust variance estimators including borrower's gender, age, age squared, education attainment, health status and locality. The results can be seen in table 6.17 to 6.20

Table 6.17 Estimated treatment effects on psychological wellbeing index using bias-corrected matching with robust variance estimators

Treatment effect	C	SE	*z*	*p*	95% CI
SATE	1.181	0.0761	15.52	0.000	[1.0318, 1.3301]
PATE	1.181	0.0838	14.09	0.000	[1.0167, 1.3453]
SATT	1.536	0.0565	27.17	0.000	[1.4253, 1.6469]
PATT	1.536	0.0814	18.86	0.000	[1.3765, 1.6957]
SATC	0.864	0.1126	7.67	0.000	[0.6435, 1.0849]
PATC	0.864	0.1166	7.41	0.000	[0.6357, 1.0926]
OLS	0.144	0.1231	1.17	0.241	[-0.0974, 0.3862]

Table 6.17 presents results of estimated treatment effects on psychological wellbeing index. The interpretation and findings of the study may be summarised as follows. Firstly, a specific sample effect is the same as its corresponding population effect in magnitude such as SATE and PATE are equal to 1.181. The two effects differ from each other only on the standard error (e.g., the standard error for SATE was 0.0761, whereas the standard error for PATE was 0.0838).

Secondly, the results suggested that participating in a microfinance programme affected the psychological wellbeing of respondents. On average, borrowers who participated in a microfinance programme had a psychological wellbeing score 1.181 units higher than that of borrowers who had never been in any microfinance schemes. With regard to the sub-population of treated participants, the treatment effect was even larger which can be seen by the SATT and PATT are equal to 1.536, or 0.355 units larger than the sample (or population) average treatment effect.

Thirdly, had all controls (i.e., borrowers who never participated in any microfinance programmes) participated and all treated borrowers not participated in any programmes, and then on average, the treatment borrowers would have a psychological score 0.864 units higher than their counterparts. As in this study, SATT equalled 1.536 and SATC equalled 0.864, or a difference of 0.672 units. This difference is attributable either to additional selection bias that was not accounted for the study or to the study data that violated assumptions of matching estimators, which suggests the need for further scrutiny.

Fourthly, a population effect indicates whether the tested intervention will be effective in a second sample taken from the same population. Taking SATT (p = 0.000) and PATT (p = 0.000) as examples, the study indicated that the treatment effect for the treated group was statistically significant in the sample the level of 0.001. If we take a second sample from the same population, we are likely to observe the same level of treatment effect for the treated, and the effect should remain statistically significant at the level of 0.001.

Finally, the results showed that all six treatment effects were statistically significant ($p < 0.05$), and all 95 percent confidence intervals did not contain a zero. Therefore, it could be concluded that the study data could not reject a null hypothesis of a zero treatment effect, and represented by participation in the microfinance programme and conditioned on the available data, borrowing from a microfinance programme appears to be an important factor causing a higher score of borrowers' psychological wellbeing.

Comparing results from OLS to results using bias-corrected matching with robust variance estimators, it was found that using bias-corrected matching with robust variance estimators was more effective and could detect the treatment effect. In contrast, OLS showed a higher level of standard error and detected a smaller difference between the treatment and the control group. This implied that borrowers who participated in a microfinance programme had a psychological wellbeing score 0.144 units higher than that of borrowers who had never been in any microfinance schemes. Thus, using OLS is not appropriate for this analysis.

Similarly, from table 6.18 to 6.20 showed the estimated effect on subjective wellbeing. The result from table 6.18 and 6.19 employed bias-corrected matching with robust variance estimators and table 6.20 used estimated average treatment effects for the treated (SATT). It was found that borrowers who participated in a microfinance programme had a higher positive affect score than that of borrowers who had never been in any microfinance schemes and had a lower negative affect score than those who had never been participated in any microfinance scheme. From table 6.19, borrowers participating in microfinance scheme reported a higher score than those who never been joined any programme significantly at the level of 0.01.

From table 6.20, the difference between borrowers participating in microfinance scheme and those who had never been joined any programme was very significance at the level 0.01 in all indicators.

Table 6.18 Estimated treatment effects on positive and negative affect index using bias-corrected matching with robust variance estimators

Treatment effect	C	SE	*z*	*p*	95% CI
Positive Affect Index (PAI)					
SATE	1.127	0.0752	14.99	0.000	[0.9798, 1.2746]
PATE	1.272	0.0817	13.80	0.000	[0.9671, 1.2874]
SATT	1.398	0.0563	24.82	0.000	[1.2874, 1.5082]
PATT	1.398	0.0775	18.03	0.000	[1.2459, 1.5498]
SATC	0.886	0.1105	8.02	0.000	[0.6692, 1.1023]
PATC	0.886	0.1146	7.73	0.000	[0.6611, 1.1104]
Negative Affect Index (NAI)					
SATE	-0.607	0.0755	-8.04	0.000	[-0.7546, -0.4589]
PATE	-0.607	0.0900	-6.74	0.000	[-0.7831, -0.4304]
SATT	-0.915	0.0746	-12.27	0.000	[-1.0612, -0.7688]
PATT	-0.915	0.1064	-8.60	0.000	[-1.1235, -0.7064]
SATC	-0.332	0.0974	-3.41	0.001	[-0.5225, -0.1409]
PATC	-0.3317	0.1136	-2.92	0.003	[-0.5543, -0.1091]

Table 6.19 Estimated treatment effects on life satisfaction index using bias-corrected matching with robust variance estimators

Treatment effect	C	SE	*z*	*p*	95% CI
SATE	0.106	0.0136	7.81	0.000	[0.0793, 0.1324]
PATE	0.106	0.0138	7.64	0.000	[0.0787, 0.1329]
SATT	0.165	0.0095	17.34	0.000	[0.1467, 0.1841]
PATT	0.165	0.0101	16.34	0.000	[0.1455, 0.1852]
SATC	0.053	0.0205	2.57	0.010	[0.0125, 0.0928]
PATC	0.053	0.0138	7.64	0.010	[0.0127, 0.0927]

Table 6.20 Efficacy subset analysis using matching estimators: estimated average treatment effects for the treated (SATT) by microfinance participation

Outcome variable	Hypothetical sign	SATT (N = 509)	*z*	*p*	95% CI
Positive affect (PA)					
Active	+	2.535	20.76	0.000	[2.3212, 2.7491]
Alert	+	2.423	23.22	0.000	[2.2437, 2.6019]
Attentive	+	2.389	22.06	0.000	[2.1764, 2.6010]
Determined	+	2.143	25.04	0.000	[1.9749, 2.3103]
Enthusiastic	+	2.072	20.76	0.000	[1.8766, 2.2678]
Excited	+	0.487	6.59	0.000	[0.3424, 0.6321]
Inspired	+	1.704	15.14	0.000	[1.4830, 1.9242]
Interested	+	0.926	12.38	0.000	[0.7793, 1.0725]
Proud	+	1.843	16.84	0.000	[1.6284, 2.0574]
Strong	+	1.561	18.07	0.000	[1.3915, 1.7300]
Negative affect (NA)					
Ashamed	-	1.874	13.20	0.000	[1.5958, 2.1523]
Afraid	-	-0.634	-7.27	0.000	[-0.8047, -0.4628]
Distressed	-	0.255	5.60	0.000	[0.1657, 0.3444]
Guilty	-	0.337	6.27	0.000	[0.2317, 0.4424]
Hostile	-	-1.837	-12.87	0.000	[-2.1164, -1.5571]
Irritated	-	0.110	-1.17	0.000	[-0.2934, 0.0744]
Stressed	-	-2.394	-15.64	0.000	[-2.6935, -2.0937]
Nervous	-	-2.128	-13.99	0.000	[-2.4266, -1.8301]
Scared	-	-2.174	-15.13	0.000	[-2.4558, -1.8925]
Upset	-	0.141	2.24	0.025	[0.0178, 0.2635]

6.5.3 Comparing impact of microfinance on subjective wellbeing

By comparing estimated average treatment effects for the treated on psychological wellbeing score using local linear regression to the unadjusted mean difference method, this showed the effectiveness of the more complex methods.

Table 6.21 Estimated average treatment effects for the treated on psychological wellbeing score: estimation by local linear regression

Group and comparison	Outcome measures: Wellbeing scores			
	PANAS	PA	NA	LS
Mean difference				
Participated in MF programme (n=240)	0.636**	0.663**	-0.207**	0.296**
Never participated in MF programme (n=256)	-0.568**	-0.592**	0.185**	-0.037**
Unadjusted mean difference	**1.204****	**1.255****	**-0.392****	**0.333****
Adjusted mean difference				
Epanechnikov kernel	2.695**	1.088**	-4.547**	2.282**
Tricube kernel	1.220**	1.242**	-0.463**	0.314**
Gaussian kernel	1.243**	1.278**	-0.441**	0.315**
Rectangular kernel	2.691**	1.097**	-4.519**	2.291**

** The 95% confidence interval does not include a zero, or $p < 0.05$ for a two-tailed t

As can be seen from Table 6.21, when using unadjusted mean difference to detect the difference between the treatment and the control group, the difference score was sometimes lower than the adjusted mean difference. For example, the PANAS or the positive and negative affects of borrowers participating in microfinance scheme was higher than those who had never been joined any programme by 1.201 units. But using the adjusted mean difference such as Epanechnikov kernel method can detect a higher difference score which was equal to 2.695 in the case of PANAS indicators. Thus, using the more complex model are more effective and more reliable when assessing impact of microfinance on interested issues.

Another technique is comparing different models and sensitivity analysis by trimming method and between logit and probit model as shown in table 6.22 to 6.24 and figure 6.7. Here two models were used for comparison, Kernel matching and local linear regression. PANAS, PA and NA were the outcome measures for this comparison.

Table 6.22 Estimated average treatment effects for the treated on psychological wellbeing change: estimation by kernel matching and local linear regression

Model comparison and sensitivity analysis		ATT (Outcome measures: PANAS scores)					
		Kernel matching			Local linear regression		
		EPA	TRI	GAU	EPA	TRI	GAU
Without trimming							
Logit	BW = 0.01	1.336	1.326	1.263	1.124	1.255	2.405
	BW = 0.05	1.222	1.228	1.244	2.695	1.220	1.243
	BW = 0.8	1.223	1.226	1.204	1.247	1.272	1.258
Probit	BW = 0.01	1.231	1.238	1.251	1.245	1.255	2.403
	BW = 0.05	1.247	1.241	1.238	2.439	1.218	1.239
	BW = 0.8	1.211	1.215	1.197	1.260	1.269	1.250
With trimming							
Logit	Tr = 2 %	1.206	1.204	1.229	2.557	1.211	1.230
	Tr = 5 %	1.212	1.210	1.229	2.561	1.206	1.233
	Tr = 10 %	1.141	1.139	1.170	2.564	1.164	1.174
Probit	Tr = 2 %	1.240	1.240	1.224	2.443	1.211	1.225
	Tr = 5 %	1.244	1.244	1.222	2.458	1.206	1.225
	Tr = 10 %	1.185	1.182	1.168	2.454	1.163	1.171

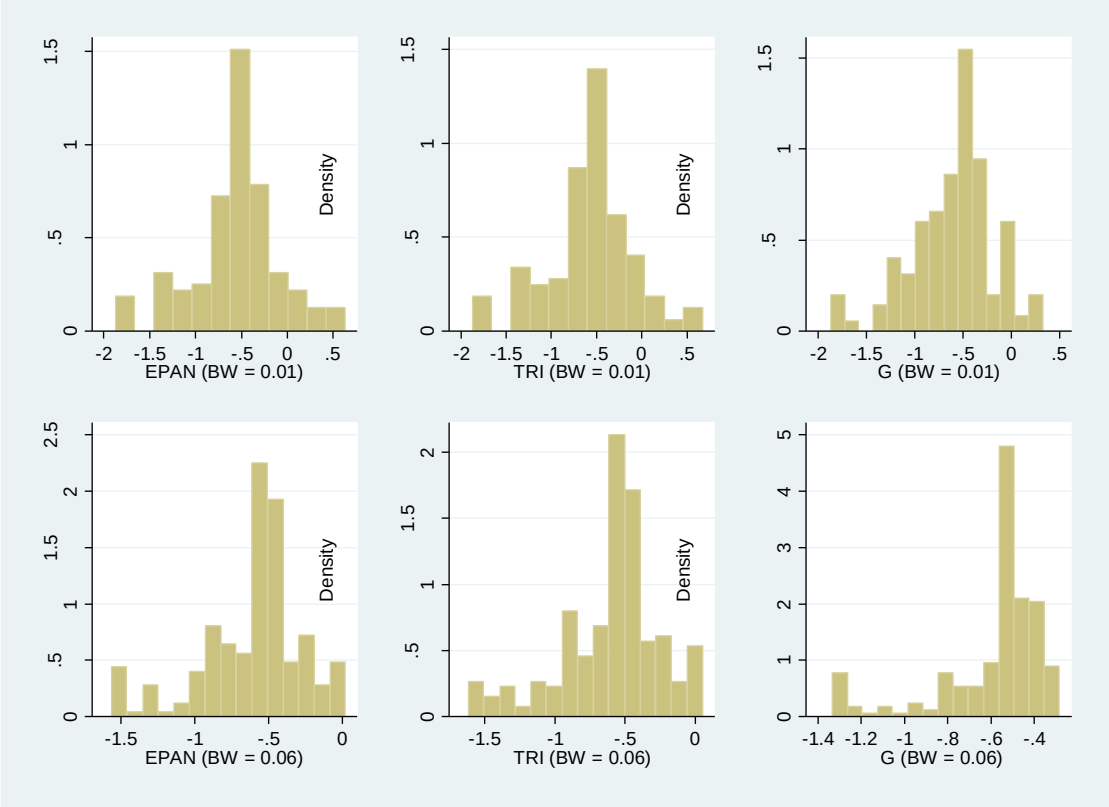


Figure 6.7 Estimated average treatment effects for the treated on psychological wellbeing change: estimation by kernel matching and local linear regression

Table 6.23 Estimated average treatment effects for the treated on positive affect change: estimation by kernel matching and local linear regression

Model comparison and sensitivity analysis		ATT (Outcome measures: PA scores)					
		Kernel matching			Local linear regression		
		EPA	TRI	GAU	EPA	TRI	GAU
Without trimming							
Logit	BW = 0.01	1.415	1.409	1.302	1.278	1.299	1.161
	BW = 0.05	1.258	1.264	1.263	1.088	1.242	1.278
	BW = 0.8	1.246	1.246	1.251	1.253	1.264	1.261
Probit	BW = 0.01	1.288	1.292	1.288	1.258	1.299	1.170
	BW = 0.05	1.271	1.269	1.256	1.112	1.246	1.265
	BW = 0.8	1.248	1.246	1.256	1.265	1.261	1.260
With trimming							
Logit	Tr = 2 %	1.239	1.243	1.252	1.105	1.240	1.264
	Tr = 5 %	1.244	1.248	1.253	1.101	1.241	1.266
	Tr = 10 %	1.207	1.211	1.219	1.076	1.207	1.232
Probit	Tr = 2 %	1.266	1.267	1.246	1.146	1.240	1.254
	Tr = 5 %	1.267	1.268	1.247	1.148	1.241	1.255
	Tr = 10 %	1.233	1.234	1.213	1.109	1.207	1.221

Table 6.24 Estimated average treatment effects for the treated on negative affect change: estimation by kernel matching and local linear regression

Model comparison and sensitivity analysis		ATT (Outcome measures: NA scores)					
		Kernel matching			Local linear regression		
		EPA	TRI	GAU	EPA	TRI	GAU
Without trimming							
Logit	BW = 0.01	-0.386	-0.372	-0.442	-0.125	-0.426	-3.660
	BW = 0.05	-0.431	-0.436	0.481	-4.547	-0.463	-0.441
	BW = 0.8	-0.463	-0.470	-0.404	-0.512	-0.556	-0.523
Probit	BW = 0.01	-0.388	-0.397	-0.442	-0.498	-0.426	-3.636
	BW = 0.05	-0.472	-0.459	-0.479	-3.852	-0.450	-0.460
	BW = 0.8	-0.428	-0.443	-0.373	-0.524	-0.554	-0.507
With trimming							
Logit	Tr = 2 %	-0.431	-0.420	-0.465	-4.163	-0.446	-0.437
	Tr = 5 %	-0.437	-0.425	-0.462	-4.182	-0.429	-0.441
	Tr = 10 %	-0.328	-0.314	-0.378	-4.241	-0.392	-0.358
Probit	Tr = 2 %	-0.464	-0.460	-0.466	-3.788	-0.446	-0.450
	Tr = 5 %	-0.471	-0.468	-0.457	-3.822	-0.428	-0.444
	Tr = 10 %	-0.386	-0.377	-0.387	-3.887	-0.391	-0.374

Table 6.25 Estimated average treatment effects for the treated on life satisfaction change: estimation by kernel matching and local linear regression

Model comparison and sensitivity analysis		ATT (Outcome measures: LS scores)					
		Kernel matching			Local linear regression		
		EPA	TRI	GAU	EPA	TRI	GAU
Without trimming							
Logit	BW = 0.01	0.440	0.443	0.322	0.262	0.324	1.778
	BW = 0.05	0.340	0.340	0.325	2.282	0.314	0.316
	BW = 0.8	0.314	0.315	0.312	0.320	0.332	0.324
Probit	BW = 0.01	0.316	0.318	0.325	0.255	0.324	1.798
	BW = 0.05	0.328	0.327	0.321	1.920	0.315	0.327
	BW = 0.8	0.312	0.313	0.316	0.323	0.331	0.320
With trimming							
Logit	Tr = 2 %	0.323	0.326	0.318	2.095	0.311	0.319
	Tr = 5 %	0.329	0.332	0.333	2.101	0.324	0.334
	Tr = 10 %	0.298	0.300	0.314	2.145	0.313	0.317
Probit	Tr = 2 %	0.322	0.324	0.314	1.879	0.312	0.319
	Tr = 5 %	0.335	0.337	0.329	1.886	0.325	0.335
	Tr = 10 %	0.315	0.313	0.313	1.939	0.314	0.319

The results above compared outcome measures using different methods and different sensitivity analysis. This comparison can be used as a guideline in order to select a suitable method for each outcome measure. As we can see from the results, for example, from table 6.22 using Epanechnikov kernel model with trimming method changed the outcome of PANAS score more than other methods. But in the case of NA score, the results from using different models and trimming did not make a different change in the outcome score. Thus, this means the NA score or borrowers are quite stable compared to the PA and PANAS score.

6.6 Household level impact

The impact of microfinance on wellbeing of borrowers can be explored in another level which is the household level impact analysis. The results is shown in figure 6.8.

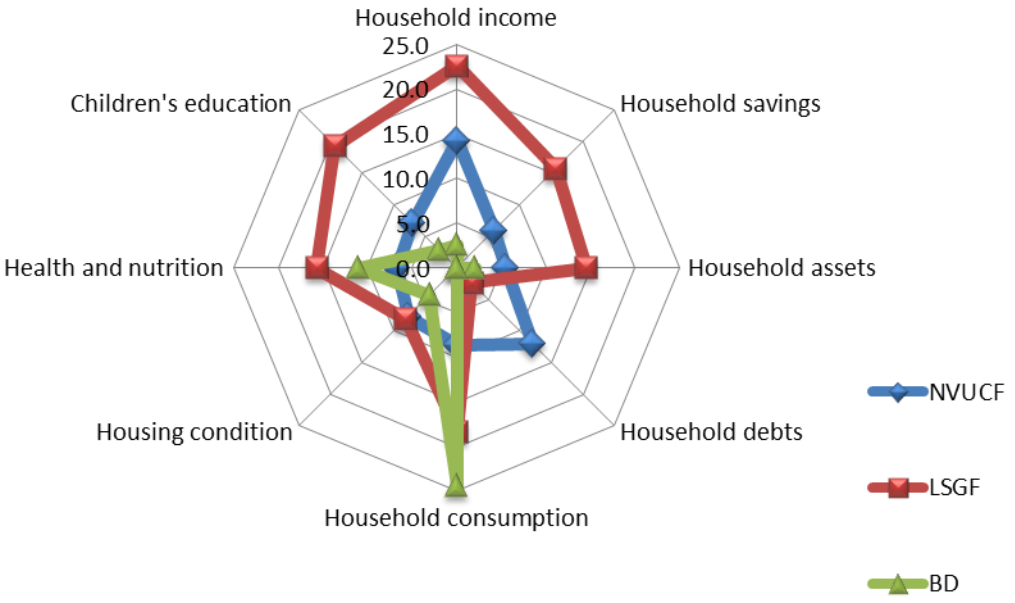


Figure 6.8 Household level impact comparison by source of loan

Figure 6.8 shows household impact comparison reported by three groups of participants. Except the household consumption, borrowers from the LSGF group were found to be better off in all dimensions compared to the NVUCF member and those who got the loans from the local moneylenders. It was clear that those who got the expensive loans from moneylenders used their loans mainly for household consumption including for buying clothes, food and medicine.

6.7 Community level impact

6.7.1 Community level impact comparison

Participating in a microfinance programme not only affects individual and household wellbeing but it can also trigger some changes in the community. Four key indicators were measured in order to capture some possible impacts shown in the following figure.

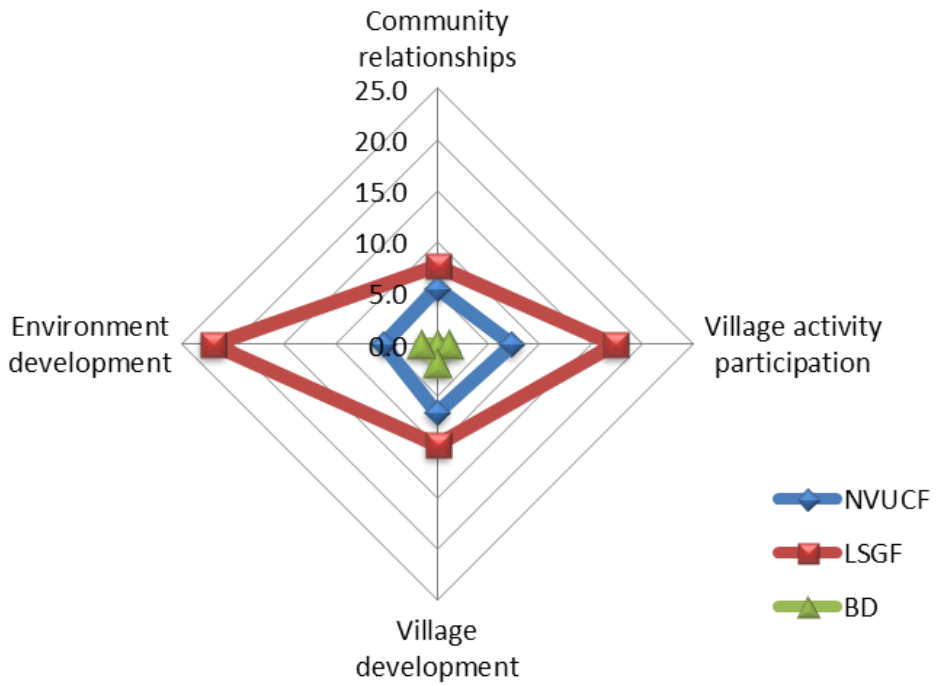


Figure 6.9 Community level impact comparisons by source of loan

According to the results, borrowers who has been participated in the savings group performed very well and led to higher positive impacts such as good community relationships, increased in village activity participation and development and members set a wide range of environment development projects including mangrove area protection, home-stay and cultural tourism.

By comparing the impact of microfinance participation on subjective wellbeing and impact scores of for the treatment and control group between three groups of borrowers (NVUCF, LSGF and BD) and comparing between microfinance participants and non-participants (MF vs BD) showed the result as shown in table 6.26. It was found that the results using the unmatched method compared to the ATT results sometimes the ATT showed a higher difference score. But sometimes the ATT showed a lower difference score. From the outcome scores, it indicated that borrowers of savings group had a higher subjective wellbeing score than other lending groups which can be seen from the difference score in the last two columns.

Table 6.26 Impact of microfinance participation on subjective wellbeing and impact scores of for the treatment and control group

Variable		Sample	MF vs BD		NVUCF vs BD		LSGF vs BD		LSGF vs NVUCF	
			T	C	T	C	T	C	T	C
PANAS		Δ	0.64	-0.57	-0.12	-0.57	1.40	-0.57	1.40	-0.12
			1.204		**0.443**		**1.965**		**1.522**	
		ATT	0.65	-0.57	-0.12	-0.69	1.40	-0.56	1.40	0.03
			1.220		**0.574**		**1.962**		**1.367**	
Impact scores	III	Δ	0.64	-0.57	-0.11	-0.57	1.40	-0.57	1.40	-0.11
			1.219		**0.460**		**1.977**		**1.517**	
		ATT	0.66	-0.54	-0.11	-0.55	1.42	-0.54	1.40	0.02
			1.194		**0.443**		**1.959**		**1.377**	
	HII	Δ	0.69	-0.61	0.09	-0.61	1.28	-0.61	1.28	0.90
			1.299		**0.703**		**1.896**		**1.194**	
		ATT	0.70	-0.62	0.10	-0.65	1.27	-0.61	1.28	0.27
			1.316		**0.746**		**1.887**		**1.003**	
	CII	Δ	0.43	-0.38	-0.30	-0.38	1.16	-0.38	1.16	-0.30
			0.816		**0.089**		**1.543**		**1.454**	
		ATT	0.42	-0.36	-0.31	-0.37	1.19	-0.35	1.15	-0.09
			0.786		**0.057**		**1.538**		**1.237**	

Note: Δ = unmatched, ATT = Average Treatment on the Treated, T = treated, C = controls

6.7.2 Microfinance, social entrepreneurship and its impact on sustainable development

This section examines linkages between microfinance participation, social entrepreneurship and sustainable development from two microfinance cases. Before the results are presented, it is better to clarify the meaning of sustain development here. The United Nations defined sustainable development as a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations (United Nations, 1987). Another most frequently quoted definition views sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (Smith and Rees, 1998). However, this study practically defines sustainable development as an equilibrium development which presents the growth in economy, social, and concern about the community environment.

Table 6.27 Comparison between two social entrepreneurship cases

Case	The village fund (NVUCF)	The Libong Savings Group for Production (LSGP)
Essential innovation	- Provides individual lending for poor and non-poor people without collateral - Promotes leadership development and community based learning	- Provides individual and group lending for poor and local small entrepreneurs without collateral. - Succeeded in expanding organisational capacity to serve the poor in all four villages
Scope	- Provided small loans to the poor in the village - Created small businesses such as fisheries, hot food and vegetable small shops	- Provided small loans to members and villagers - Created small businesses with environmental concerns such as fisheries, grouper aquaculture, organic fertiliser, seafood products, and handicrafts
Training and capacity building	- Trained members and villagers in accounting and household balance planning skills	- Trained members and villagers in accounting and household account planning - Vocational training (e.g. fertiliser project, seafood product project, handicraft project - Literacy skill project
Environmental and welfare projects	- Emergency fund for vulnerable households	- Environmental fishery - Coastal preservation project: mangrove, seagrass and dugong preservation - Home-grown and organic food - Organic fertiliser - Grouper aquaculture - Sustainable tourism (home-stay) - Emergency funds for elderly, orphans, disaster victim - Educational grants for children
Participation	Regular formal meetings twice a year with flexible organisation	Once a month formal meeting creates cooperation of members, learning process and better understanding of members

Note: from secondary data and participatory observation analysis

Table 6.27 describes the overview of characteristics of two cases in terms of innovations, the scope of the fund, training and projects, participation and the average loan. The village fund using minimalist approach with less participation

from members compared to the savings group. It is found that the regular meeting in the case of the savings group led to strong cooperation and better understanding from its memberships. At the same time, new innovation initiatives and all projects were brought up from the meeting especially environmental projects. For example, the coastal preservation project: mangrove, seagrass and dugong preservation[31] and environmental fishery project[32] are implemented to members who are in the fishery sector and young people. These valuable projects come from the brainstorming of group members during the meeting with a concern of environmental sustainability of their community.

Another example of social entrepreneurship which creates socio-economic and environmental changes is the grouper aquaculture project. This project provided loans without collateral and interest for the poor with vocational training in grouper aquaculture. Borrowers and members of this group can feed groupers in an environmental friendly method. The income from selling fish was found significantly enough for household expenditure and for child's education. In addition, this project significantly affected people who joined the group in terms of emotional wellbeing. They reported a high score of positive affects such as feeling relaxed, active, and motivated as a result of social interaction in activities and regular meetings.

To present wider results of these two cases, the significant impact analysis is concluded in table 6.28.

[31] The main activities of this project are training about coastal and seagrass preservation to students and fisherman in the community and also expand the natural coastal protection by planting new mangrove trees.

[32] This project trained members who are in fishery sector how to catch fish and other sea animals with environmental harmless equipment. Some loans are provides for buying fishery equipment for the poor family or one suffering from disaster.

Table 6.28 Impact analysis

Significant impact	Social entrepreneurship case	
	The village fund (NVUCF)	**The Libong Savings Group Fund (LSGF)**
Individual level	- Smoothing consumption level - Asset accumulation - Increased debt	- Smoothing consumption level - Increased personal saving - Increased self-esteem especially for female clients - Increased participation and skills
Household level	- Increased household consumption and asset - Increased child's education	- Increased household consumption and asset - Increased child's education - Increased gender equality
Community and environmental level	- Increased conflict between people in community - Decreased trust - Increased out-migration fishermen - Decreased cultural and social degradation - Increased environmental degradation	- Increased social cohesion, participation and trust - Increased collective positive wellbeing - Increased seagrass and mangrove areas - Increased abundance of fish and sea animals (e.g. prawns, crabs, small fish)

Note: from multi-method fieldwork data analysis June 2008 – March 2009.

Table 6.28 indicates the impact of social entrepreneurship on borrowers' livelihoods in different levels. Firstly, it was clear that the savings group activities not only created consumption and saving impact for its borrowers, but also had significantly influences on borrowers' subjective wellbeing and skills which led to sustainability in borrowers' livelihoods in the long term. By contrast, the village fund, with less participation and supportive innovation initiatives, led to long term debt of clients, as a result of the lack of capability to use the fund in a productive way, and a lack of support from the organisation.

At the household level, children's education and household consumption were the most significant impacts in both cases. A difference was observed in the savings group, with regular meetings, skills and literacy training, leadership practice, female members of the savings group had positive impacts with increased capability, self-esteem empowerment. Women in the community who joined the savings group had more important roles, both in the household and in society.

The final part, importantly links sustainable development, in terms of social and environment issues. The wider impact analysis showed that the savings group, using a participatory people-centred method in operating the fund, generated a huge impact on not only the perception of people in environmental preservation, but also changed the norms and the practical ways in doing business. The result of some changing techniques of fishing, aquaculture processes, or food and fertilizer production, reduced the cost of production and gained increased and a more and sustainable income. However, the most important issue was the positive impact on environmental preservation. According to fieldwork observations and secondary data analysis, as a result of expansion of seawood area and using a special technique in aquaculture with a very low effect on the environment, the number of fish and sea animals caught by fisherman has increased since the project was implemented in 2003. Concerning social aspects, it was also clear that, the savings group activities had harmonised the community, more so than the village fund programme. This can be seen from the voluntary cooperation and the participation in all activities in the community. One example showing the harmony of villagers is illustrated by the sustainable tourism (home-stay) project. This project distributed the local economic wealth and cooperated on the one hand, and helped achieving the environmental and cultural protection goal on the other. In this case it is clear that social entrepreneurship can be a powerful tool for local economic development, social cohesion, and a long-lasting and carefully use of natural resources.

6.8 Conclusion

A mixed paradigm research mentioned in chapter three leads to a mixed approaches of impact assessment for this study. Using different types of methods to estimate the impact of microfinance on wellbeing, it can be concluded that borrowers who participate in a microfinance programme tend to be better off, compared to those who did not participate the programme. This can be seen from the improvement in the individual, household and community level. Finally, it was found that there was a link between social entrepreneurship and sustainable development in the community which indicated the wider impact and the successful of introducing microfinance in rural Thailand.

Chapter 7
The Repayment-Wellbeing Relationship

7.1 Introduction

The impact of microfinance participation on happiness and wellbeing was shown in the previous chapter. This chapter aims to introduce the relationship between repayment behaviour and subjective wellbeing using both quantitative and qualitative results.

In the work of D'Espallier, Guérin, and Mersland (2011), it was found that that having a higher percentage of female clients in MFIs was associated with lower portfolio risk, fewer write-offs, and fewer provisions, all else being equal. Similarly, in the case of microfinance in Libong island, this study aims to examine the repayment of the loans from female borrowers who seem to show a higher performance and higher level of happiness and subjective wellbeing.

Prior literature explored repayment behaviour in microfinance programmes and its determinants, for example, gender, group lending loan conditions (Pande, Papp, and Rigol, 2013; D'Espallier, Guérin, and Mersland, 2011, 2010; Giné et al., 2010; Armendáriz de Aghion and Morduch, 2000; Ghatak, 1999; Besley and Coate, 1995; Stiglitz, 1990).

This chapter attempts to investigate debt and its consequences. Psychological attributes are determinants of observed debt outcomes or whether they are the result of being indebted is debatable. Weich and Lewis (1998) argued that financial distress strongly statistically associated to severe psychological problems. This argument was supported by the study of Marmot et al (1997), who studied the cases of British Civil servants. Roberts et al (1998) also argued that psychologically distressed individuals are more likely to get into monetary problems. Alternatively, the financial strain and worry of being in debt may lead to a decline in psychological wellbeing. Indebted students are more likely to be exhibiting symptoms of psychological distress. Psychological wellbeing can lead to other negative affects

such as stress, feelings of guilt or embarrassment, depression or social conflict. Thus, this chapter introduces the repayment-wellbeing relationship explaining how the ability to repay affects subjective wellbeing of microfinance's clients and vice versa.

7.2 Debt repayment behaviour

7.2.1 Reasons for the delayed or non-repayments

Why can some borrowers not pay back their loans? The answer to this question, using the dataset from the household survey and the in-depth interviews, can be classified into three groups of borrowers' behaviour.

1) Inability to repay ('just cannot' group)

The first common reason for the delayed repayment is the inability to repay or, put simply, the individual just cannot pay back their loan. In stark contrast to bank debt contracts, microfinance and informal loans contracts in rural Thailand require that repayments start before in the case of the informal loans and one month immediately after loan disbursement and occur monthly thereafter in the case of the NVUCF and the LSGF. This rigid or non-flexible repayment schedule can lead to deterioration of clients' repayment capacity.

The low level of repayment capacity happens when the borrowers invest the loans on business or some activities that needs more than a couple of months for revenue generation.

One example is a young family of Sakchai. The father of the family invested his loan for the groups' aquaculture farm. He could not pay back the loan on time as his product needed some time to make him good returns.

1) Misconception on the necessity to repay ('not obliged' group)

Another common reason the avoidance of repayment involves the misconception of borrowers. According to the interviews, most respondents, especially the clients of the NVUCF programme, delayed or attempted to avoid paying back the loans. They mentioned that they misunderstood that the loan from the government project was similar to a grant which they were not obliged to repay. An old lady confidently claimed that

"This village fund is a government project and it was a grant for helping people. We are not obliged to pay back. No need to repay." (Mabu, 74 year old female)

2) Moral hazard (Lack of responsibility group)

The most common reason for repayment evasion was related to the lack of responsibility or the moral hazard problem. One of the respondents explained that it was not fair if she has to repay the loan while her neighbours did not pay.

"Other people do not pay back. Why do I have to pay back while they do not? If everyone pays back, I will also pay back. Otherwise, I will not. Some households have a lot of money, some have enough money and they know they can repay. But they still delay their payment. If the group wants to get my money, they would rather get it from my neighbours first and then they can get mine." (Bilang, 34 year old male)

7.2.2 Gender and repayment

The empirical study of microcredit programmes in the Southwestern Nigerian showed that the repayment rate was influenced by variety of factors including income, distance between dwelling place and bank, amount of business investment, socio-cultural expenses, amount of loan, access to business information, penalty for lateness to group meetings, membership of cooperative society, number of days between loan application and disbursement and poverty indicator (Oke, Adeyemo and Agbonlahor, 2007).

Roslan and Karim (2009) studied determinants of microfinance repayment in Malaysia. They concluded that loan repayment was influenced by gender of the borrower, type of business activity, amount of loan, repayment period and training. Previous studies such as a study of Hossain (1988) in Bangladesh or a study of Khandker et al. (1995) concluded that female clients tended to have no problem in repayment. In the case of Libong community by looking at the correlation between gender and ability to repay, it is not clear that women are more capable to repay their loans than men. It is clear by examining the results from table 7.1 that there is no significant association between gender of borrowers and the repayment

experience according the Chi-square and the Cramer's V test. However, most of borrowers had a positive attitude on repayment by reporting that they could repay their loans within their capacity.

Table 7.1 Gender and the ability to repay

Gender	Ability to repay			Total
	Difficult to pay	Within capacity	Easy to pay	
Female	53 (10.4%)	189 (37.1%)	28 (5.5%)	270 (53%)
Male	58 (11.4%)	165 (32.4%)	16 (3.1%)	239 (47%)
Total	111 (21.8%)	354 (69.5%)	44 (8.6%)	509 (100.0%)
Correlation between source of loan and the ability to repay				
χ^2 = 3.249				
Cramer's V = 0.080				

However, by interviewing and group discussion with some female respondents, most of them felt more relaxed and openly reported more positive about loan repayment.

I: Do you have any difficulties with loan repayment?

R: I have never had any problem with repayment. I pay on time and it is very easy for me. (Payo, 44 year old female)

7.2.3 Repayment between groups

By observing and interviewing some respondents about loan repayment behaviour from different groups, it was clear that the Savings Group Fund clients tended to perform better in terms of the punctuality of loan repayment. According to table 7.2, fewer clients from the Savings Group Fund had difficulties in loan repayment compared to borrowers from the village fund and informal loans. Most of them asserted that the group members helped each other strengthen the group's economic activities. As a result, this led to a more effective way of using the loan and created more income for group members. For example, one respondent who was in the batik clothing group seemed to feel that their group performed well and they could repay the loan on time as she said that

"Our batik clothing group has a lot of revenue from selling batik products to some visitors. So we can pay back the loan we borrowed from the SGF easily."

(Sao, 37 year old female)

Table 7.2 Source of loan and the ability to repay

Source of loan	Ability to repay			Total
	Difficult to repay	Within capacity	Easy to repay	
The village fund (NVUCF)	44 (8.6%)	67 (13.2%)	9 (1.8%)	120 (23.6%)
Savings Group Fund (LSGF)	13 (2.6%)	91 (17.9%)	16 (3.1%)	120 (23.6%)
Informal loans (BD)	54 (10.6%)	196 (38.5%)	19 (3.7%)	269 (52.8%)
Total	111 (21.8%)	354 (69.5%)	44 (8.6%)	509 (100.0%)
Correlation between source of loan and the ability to repay				
χ^2 = 27.511†				
Cramer's V = 0.164†				

From table 7.2, there was a high significant correlation between source of loan and the ability to repay of borrowers according to the Chi-squared and the Cramer's V test which was significant at the level of 0.01. It was clear that borrowers who received the informal loans reported their difficulties to repay in a larger proportion, when compared to other forms of loan. For example, one respondent got the loan from local moneylender or Pae and found that repayment was troublesome.

"I need some cash for spending in my family. So I got some loans from my neighbour."

"….tired with interest. Sometimes, I do not know how to pay it back."

(Chay, 39 year old male)

7.2.4 Locality and repayment

Geographically, clients who live in the remote area have more difficulty in travelling to the village centre and repay the loan.

Table 7.3 Locality and the ability to repay

Locality	Ability to repay			Total
	Difficult to repay	Within capacity	Easy to repay	
Living in a remote area	46 (9.0%)	6 (1.2%)	0 (0.0%)	52 (10.2%)
Living in a village centre or nearby	65 (12.8%)	348 (68.4%)	44 (8.6%)	457 (89.8%)
Total	111 (21.8%)	354 (69.5%)	44 (8.6%)	509 (100.0%)
Correlation between locality and the ability to repay				
χ^2 = 151.022†				
Cramer's V = 0.545†				
Somer's d = 0.753**				

It is clear from table 7.3 that borrowers living in a remote area tend to report more difficulty in repaying, compared to the ones living in a village centre or close to the group lending centre. The high level of the Cramer's V and the Somer's d statistics indicate that locality is important for the ability to repay.

One example from the village fund group client confirms the importance of locality or the distance between client's home and the microfinance institution place. Sa, a sixty-two year old lady who got the loan from the village fund mentioned that:

"It is very difficult for me to travel to the town centre just to repay the loan. It is far and the road is not good. Even going there just to buy some food, I normally go shopping only once a week." (Sa, 62 year old female)

7.2.5 Loan use and repayment

Finally, considering the purpose of loan use, the majority of clients used their loans for household spending and entrepreneurial purpose. Upon consideration of the relationship between the purpose of loan use and the ability to repay, it was found that there was a significant association between loan use purpose and repayment as shown in the following table:

Table 7.4 Loan use purpose and the ability to repay

Loan use purpose	Ability to repay			Total
	Difficult to pay	Within capacity	Easy to pay	
Entrepreneurial purpose	42 (8.3%)	130 (25.5%)	30 (5.9%)	202 (39.7%)
Household purpose	37 (7.3%)	185 (36.3%)	11 (2.2%)	233 (45.8%)
Luxury goods purpose	1 (0.2%)	3 (0.6%)	0 (0.0%)	4 (0.8%)
Debt repayment purpose	31 (6.1%)	36 (7.1%)	3 (0.6%)	70 (13.8%)
Total	111 (21.8%)	354 (69.5%)	44 (8.6%)	509 (100.0%)
Correlation between source of loan use and the ability to repay				
χ^2 = 42.479†				
Cramer's V = 0.204†				

From table 7.4, it was clear that borrowers who used the loan for entrepreneurial purpose and for household spending tended to have a better performance in repayment. In the case of Batupute village, for example, clients who used the loan for buying some goods such as television and motorcycle were not be able to make a repayment on time.

7.3 Repayment and its impact on happiness and wellbeing

This section attempts to examine linkages between repayment, happiness and wellbeing of microfinance clients. First, by comparing repayment experience between three groups including borrowers from the village fund, savings group fund and informal loan group, figure 7.1 and 7.2 illustrated that repayment rate of savings group fund members were better than other groups. They reported a low level of repayment difficulties. In contrast to those who got the informal loans reported difficulties in repayment.

7.3.1 Repayment comparison

% Repayment experience

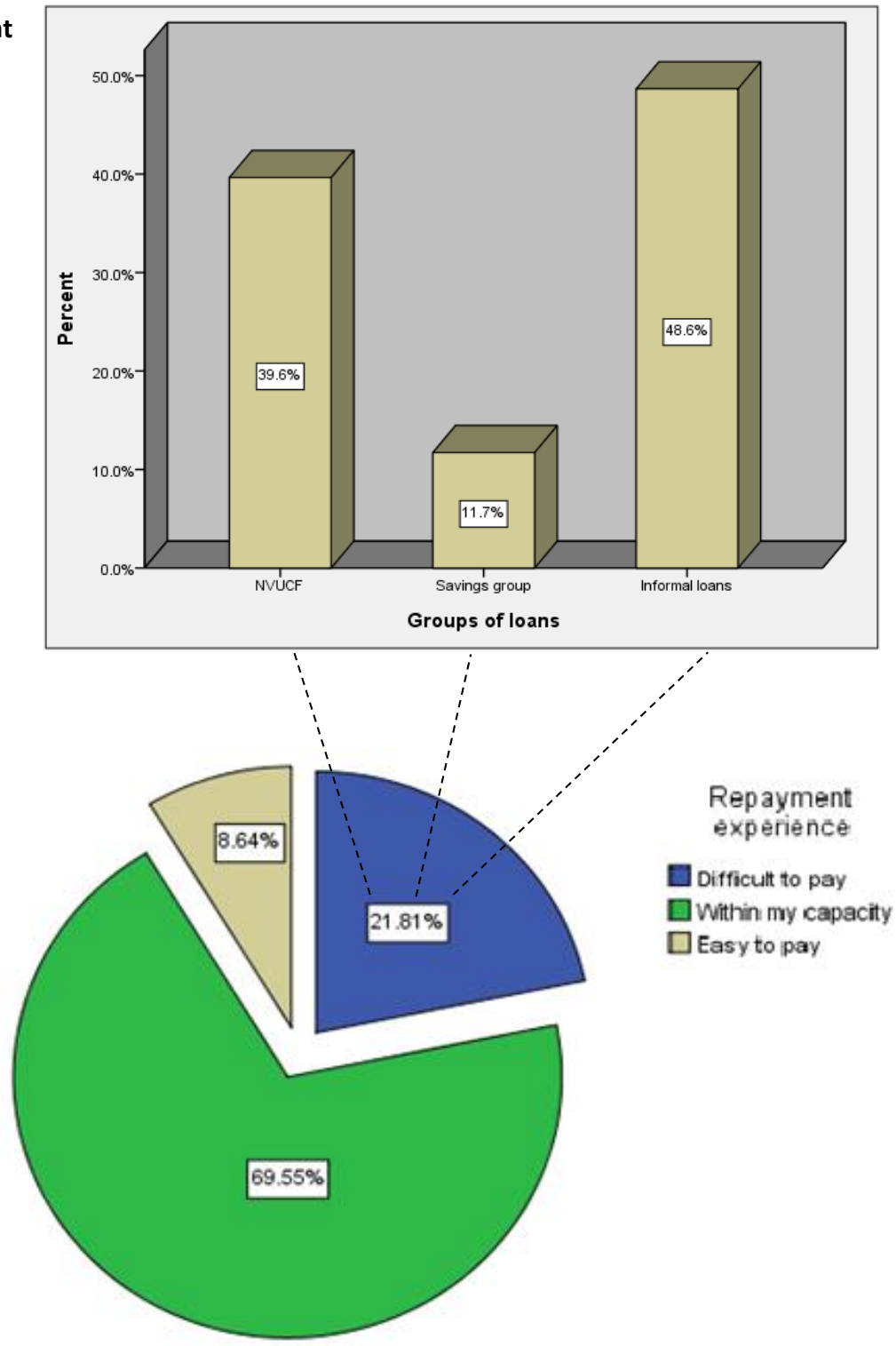


Figure 7.1 Repayment experience

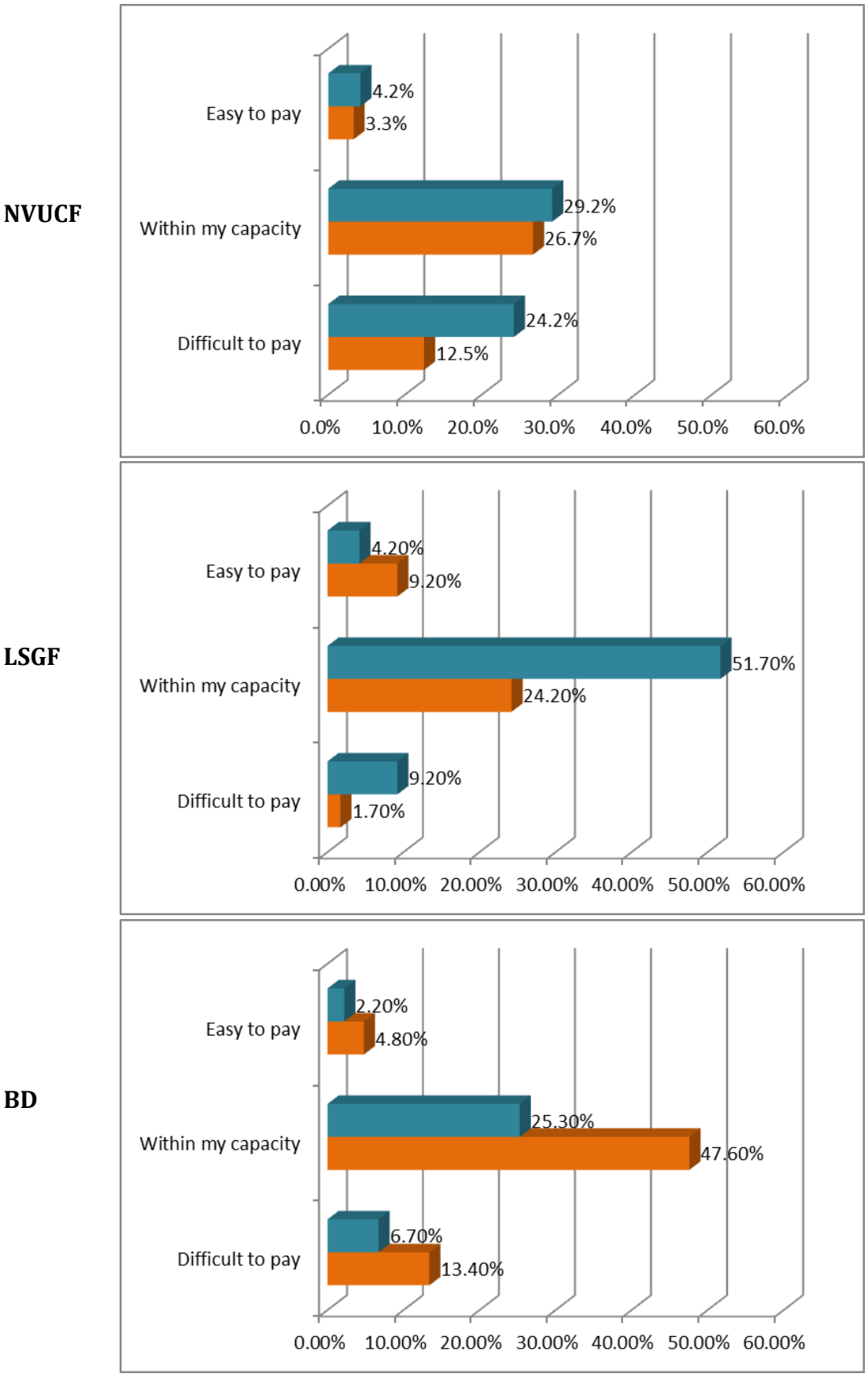


Figure 7.2 Repayment capability comparison

7.3.2 Repayment and happiness

Existing literature suggests that high debt repayments creates anxiety leading to psychological distress and poor mental and physical health and worsen financial welfare (Berger, Collins, and Cuesta, 2016; Clayton, Liñares-Zegarra, and Wilson, 2015; Keese and Schmitz, 2014; Sweet et al., 2013; Matthews and Gallo, 2011; Choi, 2009; Drentea and Lavrakas, 2000). Many studies found that debt had a negative effect on unhealthy behaviour, physical and mental health (Turunen and Hiilamo, 2014; Gathergood, 2012; Münster et al., 2009; Bailis et al., 2001; Drentea and Lavrakas, 2000).

A relationship between repayment and self-reported happiness is examined and discussed in this section. Here Chi-squared test, Cramer's V, Gamma and Somer's d test were utilised in order to assess rank correlation between the ability to repay and self-reported happiness of borrowers.

Table 7.5 The ability to repay and self-reported happiness

The ability to repay	Self-reported happiness			Total
	Not too happy	Fairly happy	Very happy	
Difficult to pay	47 (9.2%)	61 (12.0%)	3 (0.6%)	111 (21.8%)
Within my capacity	33 (6.5%)	268 (52.7%)	53 (10.4%)	354 (69.5%)
Easy to pay	1 (0.2%)	22 (4.3%)	21 (4.1%)	44 (8.6%)
Total	81 (15.9%)	351 (69.0%)	77 (15.1%)	509 (100.0%)
Correlation between the ability to repay and self-reported happiness				
		χ^2 = 113.561†		
		Cramer's V = 0.334†		
		γ = 0.727†		
Somer's d	: Happiness is dependent	= 0.404**		
	: Repayment is dependent	= 0.391**		

The results show the association between the ability to repay and self-reported happiness in Libong community according the Chi-squared test, Cramer's V and Gamma test. However, this linkage seemed not to be strong as the value of Cramer's V was quite low. But when using rank correlation test, it was clear that the link was quite high as the Gamma test was equal to 0.727 which identified a relatively strong

tie between repayment and happiness. The results from Somer's d test indicated that self-reported happiness seemed to be a consequence of repayment rather than another way round as the value of Somer's d was higher when setting happiness as dependent variable. This implied that better repayment capability led to an increase in self-reported happiness.

7.3.3 Repayment and wellbeing

In addition to self-reported happiness, the repayment experience could lead to a rise of subjective wellbeing of microfinance schemes. Here Chi-squared test, Cramer's V and correlation ratio, eta, were employed for investigating linkages between microfinance schemes and subjective wellbeing of borrowers as shown in the following table:

Table 7.6 Correlation between the ability to repay and subjective wellbeing

Sample	Subjective wellbeing				
	H	PA	NA	PANAS	LS
Whole sample	χ^2= 113.561†	η_1 = 0.634	η_1 = 0.751	η_1 = 0.849	η_1 = 0.628
	V = 0.334†	η_2 = 0.284	η_2 = 0.392	η_2 = 0.371	η_2 = 0.323
NVUCF	χ^2= 5.169	η_1 = 0.849	η_1 = 0.803	η_1 = 0.951	η_1 = 0.500
	V = 0.147	η_2 = 0.274	η_2 = 0.089	η_2 = 0.313	η_2 = 0.201
LSGF	χ^2= 15.082***	η_1 = 0.400	η_1 = 0.078	η_1 = 0.400	η_1 = 0.479
	V = 0.251***	η_2 = 0.458	η_2 = 0.170	η_2 = 0.423	η_2 = 0.222
BD	χ^2= 162.201†	η_1 = 0.529	η_1 = 0.830	η_1 = 0.879	η_1 = 0.774
	V = 0.549†	η_2 = 0.388	η_2 = 0.570	η_2 = 0.574	η_2 = 0.596

η_1 = The ability to repay is dependent

η_2 = PANAS is dependent

Table 7.6 shows the correlation between the ability to repay in each loan source and subjective wellbeing. It was found that self-reported happiness was the only indicator which was correlated to the ability to pay for the whole sample, in the case of savings group and the informal loans (BD). It indicated that borrowers felt happier when they could repay the loan in the case of informal loans statistically significant at the level of 0.001. Also, in the case of the savings group fund, group members reported that they would be happier if they could pay back the loan on time. This is statistically significant at the level of 0.01.

Table 7.7 Ability to repay determinant models

Variable	Ordered probit	Ordered probit model with marginal effect		
		Pr(1)	Pr(2)	Pr(3)
Male	-0.327***	0.086***	-0.055**	-0.030***
	(-2.66)	(2.60)	(-2.39)	(-2.62)
Age	0.016***	-0.004***	0.003***	0.001***
	(3.12)	(-3.07)	(2.78)	(2.97)
Year_ed	0.040**	-0.010**	0.007**	0.004**
	(2.06)	(-2.05)	(1.98)	(2.00)
ln_eqinc	-0.207	0.054	-0.034	-0.019
	(-1.19)	(1.19)	(-1.18)	(-1.17)
ln_exp	0.180	-0.047	0.030	0.017
	(1.10)	(-1.10)	(1.08)	(1.10)
M_saving	0.004**	-0.001**	0.0007**	0.0004**
	(2.25)	(-2.24)	(2.13)	(2.18)
Meeting	-0.019	0.005	-0.003	-0.002
	(-0.50)	(0.50)	(-0.50)	(-0.50)
Rural	2.301†	-0.600†	0.383†	0.216†
	(9.06)	(-7.72)	(5.26)	(5.78)
Debt	-0.672***	0.200**	-0.151**	-0.049***
	(-2.66)	(2.40)	(-2.14)	(-3.06)
LSGF	0.748**	-0.159***	0.060***	0.099*
	(2.53)	(-3.10)	(3.31)	(1.91)
BD	0.310	-0.081	0.052	0.029
	(1.32)	(-1.31)	(1.28)	(1.33)
ν_2	-0.619**	0.176**	-0.127*	-0.050**
	(-2.22)	(2.09)	(-1.91)	(-2.44)
ν_3	-1.041***	0.358***	-0.310**	-0.048†
	(-3.21)	(2.89)	(-2.61)	(-4.61)
ν_4	0.188	-0.045	0.024	0.021
	(0.33)	(-0.36)	(0.46)	(0.28)
ν_5	-0.127	0.035	-0.024	-0.011
	(-0.41)	(0.39)	(-0.37)	(-0.46)
ν_6	-0.603*	0.168*	-0.117*	-0.051**
	(-1.89)	(1.82)	(-1.70)	(-1.98)
ν_7	-0.685	0.227	-0.190	-0.036**
	(-1.07)	(0.92)	(-0.82)	(-2.15)
ν_8	-0.616*	0.190	-0.150	-0.040**
	(-1.83)	(1.63)	(-1.45)	(-2.58)
Log likelihood	-309.654			
McFadden's R^2	0.2360			
ξ_1	3.730			
ξ_2	6.359			

Note: *, **, ***, † represent significance at the level of 90%, 95% and 99% and 99.99% respectively.

ν_1 = Investment in a new family business
ν_2 = Purchase of new equipment and tools
ν_3 = House repair
ν_4 = Payment of school fees
ν_5 = Purchase of medicines
ν_6 = Purchase of food and clothing
ν_7 = Purchase of luxury goods
ν_8 = Debt repayment

By using ordered probit model, the results in table 7.7 imply that female clients tended to be more effective in repayment. Age, years of schooling, amount of saving, location in the village centre positively affected the ability to repay. By contrast, using the loan for debt repayments or non-productive purposes led to difficulties in repayment.

7.4 Negative affects and low performance in microfinance

The inability to repay can lead to negative affects or bad moods and emotions. Here participating different loan schemes, and the repayment experience were examined as whether it affected emotion or stress intensity.

Table 7.8 Loan sources, ability to repay and stress intensity

Group of loans	Reporting frequent stress intensity					Total
	Rarely or never	Few times	Sometimes	Often	Very often	
NVUCF	70 (58.3%)	3 (2.5%)	25 (20.8%)	9 (7.5%)	13 (10.8%)	120
LSGF	119 (99.2%)	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	120
BD	172 (%)	0 (0.0%)	6 (2.2%)	30 (11.2%)	61 (22.7%)	269
Total	361 (70.9%)	4 (0.8%)	31 (6.1%)	39 (7.7%)	74 (14.5%)	509
Correlation between source of loan and stress intensity						
χ^2 = 125.656†						
Cramer's V = 0.351†						
Ability to repay	**Reporting frequent stress intensity**					**Total**
	Rarely or never	**Few times**	**Sometimes**	**Often**	**Very often**	
Difficult to pay	53 (10.4%)	1 (0.2%)	13 (2.6%)	9 (1.8%)	35 (6.9%)	111 (21.8%)
Within my capacity	269 (52.8%)	3 (0.6%)	17 (3.3%)	27 (5.3%)	38 (7.5%)	354 (69.5%)
Easy to pay	39 (7.7%)	0 (0.0%)	1 (0.2%)	3 (0.6%)	1 (0.2%)	44 (8.6%)
	361 (70.9%)	4 (0.8%)	31 (6.1%)	39 (7.7%)	74 (14.5%)	509 (100.0%)
Correlation between the ability to repay and stress intensity						
χ^2 = 49.986†						
Cramer's V = 0.222†						

Group of loans	Reporting frequent stress intensity					Total
	Rarely or never	Few times	Sometimes	Often	Very often	
NVUCF	70 (58.3%)	3 (2.5%)	25 (20.8%)	9 (7.5%)	13 (10.8%)	120
LSGF	119 (99.2%)	1 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	120
BD	172 (%)	0 (0.0%)	6 (2.2%)	30 (11.2%)	61 (22.7%)	269
Total	361 (70.9%)	4 (0.8%)	31 (6.1%)	39 (7.7%)	74 (14.5%)	509
	γ = -0.511†					
	Somer's d = -0.265†					

The results from table 7.8 show that there is a slight correlation between loan sources and the level of stress intensity and this is statistically significant at the level of 0.01. The informal loan was the worst scenario for borrowers, creating a higher frequency of stress. Likewise, some of the village fund's clients very often felt stressed participating in this microfinance scheme. The savings group members, however, seemed to perform very well with an overwhelming majority of borrowers reporting that they rarely or never had feelings of stress or negative moods.

7.5 Conclusion

The results from this chapter confirm a relationship between repayment and subjective wellbeing. This implies that microfinance schemes or microfinance institutions with an excellent performance help to improve not only the objective wellbeing of borrowers but also enhance happiness and subjective wellbeing of their clients. Here, in the case of the savings group fund, the group lending scheme and other activities between members create a high performance for loan use. When members in the group work together and help each other as a team, this strengthens the group, creates a positive outcome and leads to happiness of all people.

Chapter 8
Conclusion

8.1 Introduction

This chapter considers the implications of this research for work relating to the impact of microfinance on happiness and wellbeing. The original research questions are discussed, and the findings are summarised in response to them. Firstly, a Thai perspective on happiness and wellbeing will be summarised. The second part concludes the determinants of happiness and wellbeing. Thirdly, the impact of microfinance is identified and linked to the happiness and wellbeing of rural borrowers in Libong community, followed by some theoretical policy discussion. Finally, some limitations of the study and ideas for future work on microfinance studies are explored.

8.2 Thai perspective on happiness and wellbeing

For the first question, how do the rural Thais perceive happiness and wellbeing? It was found that there was a change of wellbeing terminology from focusing on solely objective wellbeing (To eat well; to have sufficient and good food + to live well; to be prosperous) to emphasising both objective and subjective dimension of wellbeing (To live well; to be prosperous + to be happy; to have peace of mind) including happiness as well. Thus, from this study a new perspective on wellbeing is broader than the old understanding of Thai people.

By comparing the results of wellbeing perceptions to other studies; for instance, a study of Layard (2005) which considered the main sources of happiness in a sample of western countries, showed both similarities and differences. The factors from a study of Layard called the 'Big Seven' include family relationship, financial situation, work, community and friends, health, personal freedom and finally personal values. The similarity here is a close and warm relationship in the family is considered to be a crucial factor from both sets of results. Financial situation, work, and health are also confirmed factors in Economics and objective wellbeing studies. However, the preliminary results in Libong community did not show other wider perception on social interaction and personal freedom and values.

The in-depth interview result epitomised different dimensions of wellbeing. Some respondents conceptualised wellbeing as a multidimensional perspective which combined economic, social, health, family relationship together to become their own version of wellbeing.

8.3 Happiness and wellbeing determinants

What are the underlying determinants of their happiness and wellbeing?
In order to answer this question, first the happiness and income paradox which was originally introduced by Easterlin[33] in 1973 was revisited.

The main findings from the empirical analysis found that not only income which affected happiness and wellbeing, but also other factors seemed to have an influence on one's happiness level. Those factors included health or health condition of family members which significantly influenced self-reported happiness in all models.

Empirically, the results found in this study were similar to the results in previous studies, that happiness is lowest in the age group 45 to 64 years old (Gerdtham and Johannesson, 1997. p 16). The finding about the U-shape relationship between happiness and age also collaborates other findings about happiness and elderly people in Thailand. Other factors such as amount of savings, educational attainment and living in the village centre all had a positive influence on happiness.

8.4 Linkages between microfinance, happiness and wellbeing

To what extent does participation in microfinance programmes influence happiness and wellbeing, and in what way?

Empirical results from chapter five showed that the savings group fund had an effective performance in terms of enhancing the borrowers' capacity to produce and increasing their incomes. Moreover, the impacts of this microfinance scheme were not only enhancing in terms of the economic dimension but also led to wider impacts

[33] Easterlin's argued about the relationship between income and happiness in the article "Does Money Buy Happiness", 1973. He showed some evidence from different surveys related to the United States and other developing countries, including three communist nations and 11 Asian, African and Latin American countries.

such as social cohesion, community development and sustainable and environmental development.

Compared to previous studies, this study used a variety of happiness and wellbeing measures. The results from this study confirmed the finding that a joint-lending scheme in the model of the savings group fund had a positive impact on happiness and wellbeing.

Finally in chapter seven, the linkage between repayment or the ability to repay of borrowers and subjective happiness was confirmed. Happiness and wellbeing also had an impact on repayment. The ability to repay had been proved to lead to a high level of negative affects or moods such as stress.

8.5 Theoretical and policy recommendation

The main contribution of this study is in the field of the Economics of Happiness and Development Economics in terms of a better understanding of happiness and wellbeing and its determinants and illustrates how to combine quantitative and qualitative methods for reliable impact assessment.

1) According to the results of this study, understanding what matters for people's happiness and wellbeing can be used as a guideline for policymakers in order to design and launch new policies in response to related issues in Thailand and other similar countries.

2) The results from the effects of psychological wellbeing such as negative emotions or conflicts in the community provides some policy recommendations for improving microfinance schemes in other rural sites in Thailand and in other part of the world with the same characteristics as the Libong community. In particular how the framework to the microfinance scheme can be designed so as to minimise the potential conflicts and ill feelings within the community as well as improve productivity and development in the community. The management of the microfinance group plays an important role in the borrowers' performances. The results of this research suggests the government should launch microfinance schemes in the form of a group lending scheme. This model, regarding the savings group's performance in this study, helps to increase the performance of the borrowers and boost subjective wellbeing among group members.

3) The failure of the NVUCF which is a government fund programme needs to be solved. The NVUCF should not be launched and distributed solely without some policy guidelines, including management training and consulting and increased monitoring and control of the funds. In the case of rural Thailand and other similar settings, microfinance schemes have to be deployed with these improved mechanisms to ensure the effectiveness and sustainability of the programme.

Also, the findings on environmental impacts and sustainable community development send a powerful message in terms of guidelines for policymakers for using microfinance lending schemes and projects as a tool for rural sustainable development. In the case of Thailand, there are plenty of government village funds that cannot perform well and are in need of a serious development for directing the management of the funds with more effective approaches. The results from the Libong community can definitely be utilised and applied for practical policies across Thailand and other similar economies.

8.6 Limitations of the study and future work

Despite using both quantitative and qualitative methods for examining the impact of microfinance on happiness and wellbeing, this study still has some limitations which are discussed here.

Duration of data collection is one of the limitations of this study. In order to assess the genuine impacts of the microfinance schemes, especially on happiness and wellbeing, a longer period of time for data collection and observation is crucial. Since this study collected the data only for six months, it is hard to get a full picture of all aspects of the impacts of microfinance.

In order to fully understand subjective wellbeing and happiness, even if the researcher has attempted to reduce all biases and noise as much as possible, it is still difficult to entirely appreciate the genuine impact of microfinance on wellbeing and happiness as these concepts are very complex and difficult to measure. However, using qualitative methods. As in this study, such as in-depth interviews and focus

groups helps to improve the understanding as far as possible of the real life impact on borrowers' happiness and wellbeing after receiving and using the loans.

Thus, according to the results of this study, some methods can be applied for future work in order to strengthen impact assessment:

1) Longitudinal ethnography data collection and time-series data analysis can be employed to capture some impacts of microfinance on both objective and subjective wellbeing. Using a long-term dataset of borrowers can lead to a better understanding of individuals and households' behaviour.

2) More advanced methodology and techniques must be applied for a more plausible impact assessment outcome. As Copestake (2004) mentioned *different kinds of results emerged from using different kinds of tools*, using different types of methods for future research might be away to achieve more reliable estimates.

3) In some cases microfinance shows a positive net impact. This does not guarantee that the programme is good for support the community. Thus, future research should evaluate the cost-effectiveness of the programme and how to develop the efficiency of the fund management for a sustainable programme.

Appendix

Appendix A

Department of Economics and International Development
University of Bath

Questionnaire

Part of a research project on "The Impact of National Village and Urban community Fund Programme on Poverty Reduction and Wellbeing in Rural Thailand"
(The Economics of Happiness: Linkages between Microfinance, Happiness and Wellbeing in Rural Thailand)

Statement of confidentiality: **This questionnaire is part of a research project on "The Impact of National Village and Urban community Fund Programme on Poverty Reduction and Wellbeing in Rural Thailand". All information gathered is confidential and will be used only for research. The identity of the respondents or households will not be revealed to anyone. Nobody will be able to identify you or use the information against you.**

Part 1 Personal data

1.1 Sex

❑ Male ❑ Female

1.2 Age ____ years old

1.3 Marital status

❑ Single ❑ Married ❑ Widowed ❑ Separated/Divorced

1.4 Education level

❑ Primary education level or lower (M.3) ❑ Lower secondary education level

❑ Upper secondary education level (M.6) ❑ Vocational or technical education level

❑ Bachelor's degree level or higher

1.5 Occupation

❑ Farmer ❑ Fisherman ❑ Shopkeeper ❑ Housewife

❑ Other, please specify _____

1.6 Income from your main occupation _____ Baht per month

1.7 Do you have any extra income?

❑ Yes _____ Baht per month ❑ No (go to question 9)

1.8 From where do you get the extra income? _____

1.9 Have you got any remittances from your relative?

❑ Yes _____ Baht per month ❑ No

Part 2 Family structure

Can you please tell us about all members of your household?

No.	2.1 Name	2.2 Affiliation to you	2.3 Sex	2.4 Age	2.5 Marital status	2.6 Educational level	2.7 Occupation	2.8 Income	2.9 Does he/she stay with you?	2.10 If no, where?
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										

Part 3 Use of Loans, Profits and Savings

<table>
<tr><td colspan="2">3.1 Have you borrowed any money from the NVUCF programme in the past five years?</td></tr>
<tr><td>❑ Yes</td><td>❑ No</td></tr>
<tr><td>3.2 How much have you borrowed?
_____ Baht</td><td>3.2 Where do you get your loans from?
_____</td></tr>
<tr><td>3.3 How many times have you got the loan from this programme?
_____ times</td><td>3.3 How much have you borrowed?

_____ Baht per _____</td></tr>
<tr><td>3.4 Which year did you take the loan?
_____</td><td>3.4 How much is the interest?
_____ per _____</td></tr>
<tr><td>3.5 Are you still borrowing money from this programme?
❑ Yes (go to question 3.6)

❑ No (go to question 3.7)</td><td>3.5 What is the interest payment system?
❑ Deducted from loan proceeds
❑ Not deducted but included in regular payments
❑ Not deducted but lumped in final payment</td></tr>
<tr><td>3.6 Why do you decide to get this loan?
_____
_____
_____
_____</td><td>3.6 What is the payment mode?
❑ Daily
❑ Weekly
❑ Quarterly
❑ Other, please specify _____</td></tr>
<tr><td>3.7 Why do you stop borrowing the loan from this programme?
_____
_____
_____
_____
_____</td><td>3.7 What is the loan collection method?
❑ Group/centre collection meeting
❑ Individual collection through collectors
❑ Deposit of loan payment to depository bank account
❑ Other, please specify _____</td></tr>
<tr><td>3.8 Who decided to borrow the loan?
_____</td><td>3.8 Who decided to borrow the loan?
_____</td></tr>
<tr><td>3.9 What do you think is the main problem of the NVUCF programme?
❑ The loan amount is too small
❑ The loan length is too short
❑ I do not like the repayment schedule
❑ I was unwilling to borrow because of obligatory savings or training
❑ I did not like the treatment by the staff of or had personal conflicts with staff
❑ Other, please specify
_____</td><td>3.9 What do you think is the main problem of the NVUCF programme?
❑ The loan amount is too small
❑ The loan length is too short
❑ I do not like the repayment schedule
❑ I was unwilling to borrow because of obligatory savings or training
❑ I did not like the treatment by the staff of or had personal conflicts with staff
❑ Other, please specify
_____</td></tr>
</table>

3.10 How did you spend your loan? (Mark the 3 largest categories of expenditure)

[____] 1. Start a new business
[____] 2. Buy more inputs/tools
[____] 3. Improve housing
[____] 4. School fees
[____] 5. Medical expenses
[____] 6. Buy food and clothing
[____] 7. Buy goods
[____] 8. Pay debt
[____] 9. Other (specify)
[____] 99. Don't know or unwilling to answer

3.11 Who decided to use the loan in that way?

❑ Yourself
❑ Your spouse
❑ Yourself and your family members
❑ Other, please specify _____

3.12 Did the loans help your family? If yes, how? (Multiple responses possible)

❑ 1. Clothing
❑ 2. Improve housing
❑ 3. Educate children
❑ 4. Recreation
❑ 5. Medical cost or improve health
❑ 6. More and better food
❑ 7. Furniture, utensils, goods for your house
❑ 8. Other, please specify _____

3.13 Which of the following best describes your experience in paying your loan?

Difficult to pay (-1)	Within my capacity to pay (+1)	Easy to pay (+2)	Don't know (99)

3.14 During the last 12 months, did your income in the business…….?

Increase greatly(+2)	Increase some (+1)	Stay the same (0)	Decrease some (-1)	Decrease greatly (-2)	Don't know (99)

3.15 Which answer best describes the impact for you of your loans?

Helped me quite a lot (+2)	Helped me a little (+1)	Didn't help me at all (0)	Loan was a burden (-1)	Don't know (99)

3.16 Do you think you benefited from being a member of this programme?

❑ Yes ❑ No

3.17 Please identify the specific ways in which being in this programme helped you.

_____
_____
_____
_____
_____

Part 4 Impact of the loans

What do you think your loans affect your activities, your household wellbeing and community? Please indicate the change of the following categories by comparing your circumstances before and after borrowing the loans.

+2 = "Increase greatly" or "A lot better"
+1 = "Increase some" or "Better"
0 = "Stay the same"
-1 = "Decrease some" or "Worse"
-2 = "Decrease greatly" or "Noticeably worse"
99 = "Don't know"

Impact indicators	+2	+1	0	-1	-2	99	Details
Individual level							
4.1 Income							
4.2 Business profit							
4.3 Liquidity							
4.4 Personal savings							
4.5 Personal asset							
4.6 Self-esteem							
4.7 Participation in society							
Household level							
4.8 Household income							
4.9 Children education							
4.10 Housing condition							
4.11 Consumption level							
4.12 Nutrition							
4.13 Saving							
4.14 Asset							
Community level							
4.15 Village relationship							
4.16 Village participation							
4.17 Village development							
4.18 Environment issue							

Part 5 Subjective wellbeing Analysis of the Loans

5.1 Taking all things together, how would you say things are these days? Would you say you are _____.

❑ Very happy ❑ Fairly happy ❑ Not too happy

5.2 Do you think?	**-1**	**0**	**1**	**99**
5.2.1 The loans help improve your wellbeing				
5.2.2 The loans help improve your family's wellbeing				
5.2.3 The loans make you and your family happier				
5.2.4 The loans reduce your vulnerability				
5.2.5 Without the loans, your wellbeing cannot improve				

Note: +1 = You Agree 0 = Neither agree nor disagree
-1 = You do not agree 99 = Not known

5.3 After receiving loans, has the loans make you feel……..?

Feelings	**How often do you feel …… as a consequence of the loans?**						**Details**
	1	**2**	**3**	**4**	**5**	**99**	
1. Interested							
2. Distressed							
3. Excited							
4. Upset							
5. Strong							
6. Guilty							
7. Scared							
8. Hostile							
9. Enthusiastic							
10. Proud							
11. Irritated							
12. Alert							
13. Ashamed							
14. Inspired							
15. Nervous							
16. Determined							
17. Attentive							
18. Jittery							
19. Active							
20. Afraid							

Note: 1 = Rarely or never
2 = Few times
3 = Sometimes
4 = Often
5 = Very often
99 = Not known

Appendix B

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Informed consent form for participants of research project:
The Impact of National Village and Urban community Fund Programme on Poverty Reduction and Wellbeing in Rural Thailand
(The Economics of Happiness: Linkages between Microfinance, Happiness and Wellbeing in Rural Thailand)

I agree to participate in the above project and give my consent freely. I understand that the project will be carried out as described in the information statement, a copy of which I have retained. I realise that whether or not I decide to participate my decision will not affect me in any way. I also realise that I can withdraw from the project at any time and do not have to give any reasons for withdrawing. I have had all questions answered to my satisfaction. I understand that by agreeing to participate I am willing to:

(…) be interviewed by the Researcher; and

(…) allow the interview to be audio recorded.

I understand that any information I provide is confidential: only the Researcher will have access to the information provided. Should the Interviewee wish to remain anonymous, every effort will be made to ensure that no information that could lead to the identification of this individual will be disclosed in reports associated with the project.

(…) I would like to receive the *'Research findings report'* once completed. Please send this report to ……

(…) I would prefer to not be identified by name in the *'Research findings report'*, to be disseminated to participating organisations.

(…) I would prefer to not be identified by name in the full doctoral thesis.

(…) I would like to receive a summary of the interview transcript, to review and amend if necessary. Please send this report to ……

Name: …… (please print)
Signature: …….. Date: ……

Appendix C

Department of Economics and International Development
University of Bath

Key informant Interview Schedule

Part of a research project on "The Impact of National Village and Urban community Fund Programme on Poverty Reduction and Wellbeing in Rural Thailand"
(The Economics of Happiness: Linkages between Microfinance, Happiness and Wellbeing in Rural Thailand)

Key informant's information

Key informant's name		**Interview number**	
Occupation		**Village/Organisation**	
Sex		**Age**	
Educational level		**Marital status**	
Interviewer		**Date interview**	
Duration of interview			

Statement of confidentiality: **This interview is part of a research project on "The Impact of National Village and Urban community Fund Programme on Poverty Reduction and Wellbeing in Rural Thailand". All information gathered is confidential and will be used only for research. The identity of the respondents will not be revealed to anyone. Nobody will be able to identify you or use the information against you.**

Part 1: Personal data and warm up questions

1. What is your name?

2. What do you do?

3. How long have you been working for the NVUCF programme? (For staff)

4. How long have you been involved in the NVUCF programme? (For the head of the village and specialists)

5. How much you get involved in the programme?
   - What is your responsibility in the programme?
   - Can you make a decision for the programme?
   - Could you give me some examples of your involvement with this programme?

Part 2: General idea about the NVUCF programme

1. What are your views on the NVUCF programme in general?

2. Can you explain why you think this way?

3. Could you provide more details about that?

Part 3: Impact of the NVUCF programme

1. From your point of view, how has the NVUCF affected individual clients, their households and community?
   - Could you give me some examples for your answers?
   - Do you have any evidence to support your view about the impact of the programme?

2. From your point of view, how has the NVUCF helped individual client's poverty problem and improved their wellbeing?
   - Could you give me some examples about that?
   - Can you explain why you think the NVUCF has impacted individual client, their household and community that way?

Part 4: Difficulties and unintended impact

1. Did you encounter any difficulties? Any unforeseen difficulties?

2. What do you feel are the negative consequences of this programme?

3. How has this programme positively affected (wellbeing) if at all?

4. Were there any unintended consequences of the programme?

Part 5: Ideas for programme's improvement

1. How do you feel/think that this programme could be improved?

2. What makes you think like that?

3. Could you give me some examples for your answers?

Appendix D

Department of Economics and International Development
University of Bath

Semi-structured Interview Schedule

Part of a research project on "The Impact of National Village and Urban community Fund Programme on Poverty Reduction and Wellbeing in Rural Thailand"
(The Economics of Happiness: Linkages between Microfinance, Happiness and Wellbeing in Rural Thailand)

Interviewee's information

Interview number		**Name**	
Sex		**Age**	
Educational level		**Occupation**	
Marital status		**Household composition**	
Site/Village		**Interviewer**	
Date interview		**Duration of interview**	

Statement of confidentiality: **This interview is part of a research project on "The Impact of National Village and Urban community Fund Programme on Poverty Reduction and Wellbeing in Rural Thailand". All information gathered is confidential and will be used only for research. The identity of the respondents will not be revealed to anyone. Nobody will be able to identify you or use the information against you.**

Part 1: Questions on loan use

1. What did you do with your loan money?

2. Why did you use this loan money in these ways?

3. What changes took place as a result of spending your loan money as you did?

4. After fully paying your loan and paying all business expenses, did you have a surplus? (If so, continue to question 5. If no, go to question 7)

5. If there was a surplus, how much was it?

6. What did you do with it?

7. What would you have done if you had not taken this loan?

8. Did you experience a crisis during this loan cycle?

9. Did your loan help you cope with the crisis?

10. How?

11. How did the crisis affect your ability to make loan repayments?

Part 2: Questions on saving

1. Do you have savings?

2. If yes, how do you keep them?

3. Why are you saving?

4. How much did you withdraw from your savings in the last 6 months?

5. How did you use savings?

6. Why did you decide to use the savings in these ways?

7. What would you have done if you did not have these savings available?

8. Did you save regularly before you joined this programme?

Part 3: Questions on poverty and wellbeing impact

1. How has the loan affected your behaviour and activities? (such as income change, consumption, saving habit)
   - Could you give me some examples for your answer?
   - How much it affected you?

2. How has the loan affected your household?
   - Can you give me some examples for your answer?

3. How has the loan change your community?
   - Can you give me some examples for your answer?

4. What does wellbeing mean for you?

5. What indicators are most important for you in your definition of wellbeing?

6. At present, where would you rate your wellbeing level?

7. Can you explain your reasons for rating your wellbeing in this way? Can you provide an example?

8. Do you feel your level of wellbeing changed after receiving the loan? Can you compare your level of wellbeing before and after participating in the programme/getting loans?

9. Can you give specific examples using your personal wellbeing indicators?

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